




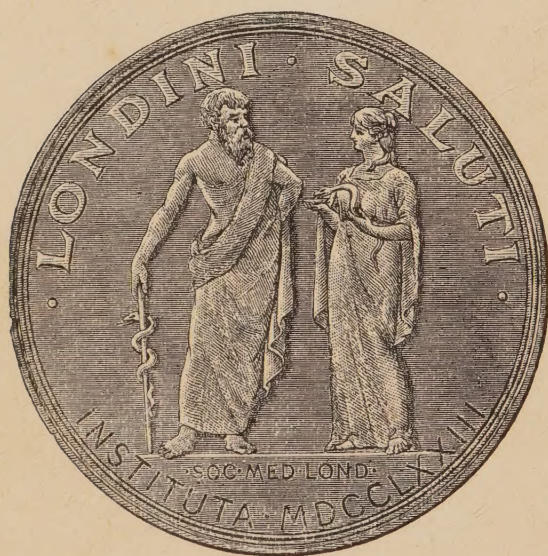
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OF
THE MEDICAL SOCIETY
OF
LONDON.

VOLUME THE TWENTY-FIRST.



EDITED BY
ROBERT MAGUIRE, M.D., F.R.C.P.,
AND
WILLIAM H. BATTLE, F.R.C.S.

LONDON:
PRINTED FOR THE SOCIETY,
BY HARRISON AND SONS, ST. MARTIN'S LANE,
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1898.

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THE present Volume comprises the Transactions of the Society during its one hundred and twenty-fifth Session, from October 11th, 1897, to May 16th, 1898.

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| 1805. GEORGE PINCKHARD, M.D. | 1847. GOLDING BIRD, M.D., F.R.S. |
| 1806. HENRY FIELD. | 1848. FRANCIS HIRD. |
| 1807. JOSEPH ADAMS, M.D. | 1849. WILLIAM HUGHES WILL- shire, M.D. |
| 1808. JOHN MASON GOOD, F.R.S. | 1850. FRANCIS HIRD. |
| 1809. SAYER WALKER, M.D. | 1851. RICHARD ROWLAND. |
| 1810. GEORGE BIRKBECK, M.D. | 1852. EDWIN CANTON. |
| 1811. WILLIAM BLAIR. | 1853. JOHN SNOW, M.D. |
| 1812. RICHARD TEMPLE, M.D. | 1854. HENRY SMITH. |
| 1813. RICHARD SAUMAREZ, F.R.S. | 1855. JAMES FERNANDEZ CLARKE. |
| 1814. GEORGE REES, M.D. | 1856. BENJ. WARD RICHARDSON, M.D., F.R.S. |
| 1815. JOHN TAUNTON. | 1857. WILLIAM ADAMS. |
| 1816. HENRY CLUTTERBUCK, M.D. | 1858. ALFRED BARING GARROD, M.D. |
| 1817. JOHN STEVENSON. | 1859. CHARLES HENRY FELIX ROUTH, M.D. |

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| 1860. JOHN GAY. | 1881. ARTHUR EDWARD DURHAM. |
| 1861. ARTHUR LEARED, M.D. | 1882. EDMUND SYMES THOMPSON, M.D. |
| 1862. VICTOR DE MÉRIC. | 1883. EDWARD LUND. |
| 1863. SAMUEL OSBORNE HABERSHON, M.D. | 1884. CHARLES THEODORE WILLIAMS, M.D. |
| 1864. JOHN LOUIS WILLIAM THUDICHUM, M.D. | 1885. GEORGE MURRAY HUMPHRY, M.D., F.R.S. |
| 1865. ROBERT GREENHALGH, M.D. | 1886. RICHARD DOUGLAS POWELL, M.D. |
| 1866. THOMAS CHRISTOPHER WEEDEN COOKE. | 1887. SIR WILLIAM MACCORMAC. |
| 1867. FREDERICK WILLIAM HEADLAND, M.D. | 1888. SIR JOSEPH FAYRER, K.C.S.I., M.D., F.R.S. |
| 1868. WILLIAM FREDERICK TEEVAN. | 1889. JONATHAN HUTCHINSON, F.R.S. |
| 1869. GEORGE DUNCAN GIBB, M.D. | 1890. ARTHUR ERNEST SANSOM, M.D. |
| 1870. FRANCIS MASON. | 1891. SIR JOSEPH LISTER, Bart., F.R.S. |
| 1871. WILLIAM CHOLMELEY, M.D. | 1892. SIR JAMES CRICHTON-BROWNE, M.D., F.R.S. |
| 1872. FREDERICK JAMES GANT. | 1893. W. MITCHELL BANKS. |
| 1873. JOHN COCKLE, M.D. | 1894. WILLIAM M. ORD, M.D. |
| 1874. ROBERT BRUDENELL CARTER. | 1895. A. PEARCE GOULD. |
| 1875. GEORGE BUCHANAN, M.D. | 1896. WILLIAM H. ALLCHIN, M.D. |
| 1876. ERASMUS WILSON, F.R.S. | 1897. EDMUND OWEN. |
| 1877. JOHN HUGHLINGS JACKSON, M.D., F.R.S. | 1898. FREDERICK T. ROBERTS, M.D. |
| 1878. ALFRED CARPENTER, M.D. | |
| 1879. WALTER JOHN COULSON. | |
| 1880. WILLIAM HENRY BROADBENT, M.D. | |

THE FOTHERGILLIAN GOLD MEDALLISTS.

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| 1787. WILLIAM FALCONER, M.D. | 1853. ALFRED WILLIAM POLAND. |
| 1790. ROBERT WILLAN, M.D. | 1854. BENJAMIN WARD RICHARDSON, M.D. |
| 1791. JOHN COAKLEY LETTSOM, M.D. | 1856. WILLIAM BURKE RYAN. |
| 1795. JOHN MASON GOOD. | 1857. EDWIN CANTON. |
| 1801. FRANCIS BOUTTATZ, M.D. | 1858. THOMAS HERBERT BARKER, M.D. |
| 1803. EDWARD JENNER, M.D. | 1859. ALDERMAN THOMAS HOUGHTON WATERS. |
| 1824. ROBERT W. BAMPFIELD. | 1868. JOHN CLAY. |
| 1828. JOHN GEORGE PARRY. | 1870. THOS. SMITH CLOUSTON, M.D. |
| 1831. WILLIAM AUGUSTUS GUY. | 1872. EDWARDS CRISP, M.D. |
| 1834. WILLIAM JAMES CLEMENT. | 1873. JOHN KENT SPENDER, M.D. |
| 1835. GEORGE MOORE. | 1877. PETER MURRAY BRAIDWOOD, M.D. |
| 1836. THOMAS EGERTON BRYANT. | 1878. JOHN MILNER FOTHERGILL, M.D. |
| 1838. GEORGE PILCHER. | 1882. THOMAS MICHAEL DOLAN, M.D. |
| 1840. SAMUEL OSBORN. | 1883. NORMAN PORRITT. |
| 1842. JAMES RISDON BENNETT, M.D. | 1886. JOHN STRAHAN. |
| 1843. JOHN WEAVER LEVER, M.D. | 1888. HOBART AMORY HARE, M.D., U.S.A. |
| 1844. HENRY PRATT ROBARTS. | 1893.* WILLIAM RICHARD GOWERS, M.D., F.R.S. |
| 1845. WALTER COOPER DENDY. | 1896. VICTOR HORSLEY, F.R.S. |
| 1846. ROBERT MORTIMER GLOVER, M.D. | |
| 1847. SILAS STEDMAN. | |
| 1849. JOHN MILLIGAN. | |
| 1850. RICHARD PAYNE COTTON, M.D. | |
| 1851. RICHARD HODGES. | |
| 1852. FREDERICK WILLIAM HEAD- LAND. | |

* *First Triennial Award under the Charity Commissioners' New Scheme,*
vide *Trans.*, vol. *xiv*, p. *xi*.

THE HONORARY FELLOWS.

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1893. BARNES, ROBERT, M.D., Lingwood, Liss, Hants, LL, c.
1896. BERGER, PAUL, Professor of Clinical Surgery in the Faculty of Medicine, Member of the Academy of Medicine, Surgeon to "l'hôpital de la Pitié," 16, Rue de Bourgogne, Paris.
1897. BERGMANN, Prof. E. VON, M.D., Berlin.
1881. BILLINGS, JOHN S., M.D., Washington, Surgeon to the United States Army; Librarian to the Surgeon-General's Library, Washington.
1894. CATRIN, LOUIS, M.D., Médecin-major de première classe, Professeur agrégé à l'Ecole du Val-de-Grace, Paris.
1873. CHAUVEAU, A., Professor of Physiology at the Medical School of Lyons.
1890. CRUDELI, TOMMASI, M.D., Rome.
1881. DA COSTA, J. M., M.D., Professor of Medicine in the Jefferson Medical College, 1700, Walnut-street, Philadelphia.
1881. EMMET, THOMAS ADDIS, M.D., 89, Madison-avenue, Surgeon to the Woman's Hospital of the State of New York.
1886. GAIRDNER, Sir WILLIAM TENNANT, K.C.B., M.D., LL.D. Edin., F.R.C.P. Edin., F.R.S., 225, St. Vincent-street, Glasgow.
1894. GANT, FREDERICK JAMES, F.R.C.S., 16, Connaught-square, W., Consulting Surgeon to the Royal Free Hospital. P, VP 2, LL, o, c 3.
1897. GUYON, FELIX, M.D., Professor in the Faculty of Medicine, Member of the Institute and of the Academy of Medicine, Paris.
1881. HALLA, JOSEPH, Professor of Medicine in the University of Prague.
1869. HARE, CHARLES JOHN, M.D., Berkeley House, Manchester-square, W., Consulting Physician to University College Hospital, and late Professor of Clinical Medicine in University College. P, VP 2. c 8, LL. *Trustee.*
1897. HINGSTON, Sir W. HALES, M.D., Montreal.
1875. JENNER, Sir WILLIAM, Bart., K.C.B., D.C.L., LL.D., M.D., F.R.S., Greenwood, Durley, Hants, Physician-in-Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; late President of the Royal College of Physicians; Emeritus Professor of Clinical Medicine in University College, London; Consulting Physician to University College Hospital.
1890. KOCHER, THEODOR, Professor, Berne.
1883. LE ROY DE MERICOURT, A., M.D., Paris.
1890. LOMBARD, HENRI-CLERMOND, M.D., Geneva.

1878. MITCHELL, S. WEIR, M.D., Walnut-street, Philadelphia.
1881. NUSSBAUM, JOHN NEPOMUK RITTER VON, M.D., Professor of Surgery in the University of Munich.
1875. OLLIER, Professor, Lyons.
1873. PAGET, Sir JAMES, Bart., D.C.L., LL.D., F.R.S., 5, Park-square, W., Serjeant-Surgeon to H.M. the Queen; Surgeon to H.R.H. the Prince of Wales; Consulting Surgeon to St. Bartholomew's Hospital.
1897. RODDICK, T. G., M.D., 80, Union-avenue, Montreal.
1877. SANNÉ, A., 12, Place de Laborde, Paris.
1873. VIRCHOW, RUDOLPH, M.D., Professor of Pathological Anatomy in the University of Berlin.

CORRESPONDING FELLOWS.

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1882. BADALONI, GIUSEPPE, M.D., Bologna, Italy.
 1856. BAKER, ALBERT, M.D., Clarence House, Exmouth.
 1855. BEARDSLEY, AMOS, Bay Villa, Grange, Lancashire.
 1850. BENEKE, F. W., M.D., New York.
 1850. BÖHM, PROFESSOR, M.D., Vienna.
 BOTTINI, GIUSEPPE, M.D., Milan.
 1855. COATES, CHARLES, M.D., F.R.C.P., 10, Circus, Bath, Consulting Physician
 to the Bath Royal United Hospital. c 3.
 1850. COX, WILLIAM ISIDORE, Hawkesbury-Upton, Gloucestershire. c.
 1876. DE MUYNCK, J., M.D., Ghent.
 1853. FALLOT, R., M.D., St. Laurent d'Aigouze, Montpellier, France.
 1889. FRANK, PHILIP, M.D., F.R.C.P., Cannes, France.
 1876. GRIFFITH, RICHARD GLYN, Allahabad, India.
 1896. HAMILTON, ALLAN McLANE, M.D., 44, East Twenty-ninth Street,
 New York.
 1864. HASENFELD, EMMANUEL, M.D., Pesth.
 HYMAN, —, M.D., Antwerp.
 1875. JONES, PHILIP SYDNEY, M.D., F.R.C.S., Examiner in Medicine in the
 University of Sydney, Australia, Hon. Consulting Surgeon to the
 Sydney Infirmary.
 1861. JOURNEZ, HENRI, M.D., 43, Rue de la Charité, Bruxelles, Belgique.
 1851. KÖLLIKER, ALBERT, M.D., Professor of Anatomy and Physiology at the
 University of Wurzburg.
 1876. LEIGHTON, WALTER H., M.D., Lowell, Massachusetts, U.S.A.
 1851. NEGRI, GAETANO, M.D. Pisa.
 1865. PERUZZI, DOMENICO, M.D., 22, Via Mazzini, Bologna.
 1886. ROCHA, A., M.D., Coimbra, Beira, Portugal.
 1860. ROUSSEL, M.D., Dean of the Faculty of Medicine, Montpellier.
 SCHARLAN, GUS. W., M.D., Stettin, Prussia.
 1876. SCHMITZ, RICHARD, M.D., Neuenahr.
 1874. SCHUTGOWSKY, J., St. Petersburg.
 1851. STOCKWELL, THOMAS GOLDESBROUGH, F.R.C.S., 6 Circus, Bath,
 Surgeon to the Bath Royal United Hospital.
 WILLIAMS, CHARLES, F.R.C.S. Edin., 48, Prince of Wales-road,
 Norwich; Senior Surgeon to the Norfolk and Norwich Hospital.

THE FELLOWS

OF

THE MEDICAL SOCIETY OF LONDON.

(Corrected to 1st November, 1898.)

EXPLANATION OF ABBREVIATIONS.

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| P.—PRESIDENT. | FM.—FOTHERGILLIAN GOLD MEDALLIST. |
| VP.—VICE-PRESIDENT. | SM.—SILVER MEDALLIST. |
| T.—TREASURER. | O.—ORATOR. |
| L.—LIBRARIAN. | CFC.—CHAIRMAN, HOUSE AND FINANCE COMMITTEE. |
| S.—SECRETARY. | §—SEC. FOR FOREIGN CORRESPONDENCE. |
| C.—COUNCILLOR. | LL.—LETT SOMIAN LECTURER. *—LIFE MEMBERS. |
| TR.—TRUSTEE. | |

The number prefixed signifies the date of election. The figures appended indicate the number of Sessions served, and refer to past appointments ONLY.

1890. ABBOT-ANDERSON, WILLIAM MAURICE, M.B., 37, Wimpole-street, W.
1888. ABBOTT, CHARLES EDWARD, M.R.C.S., Harley House, Cambray, Cheltenham.
1891. ABRAHAM, PHINEAS S., M.D., 2, Henrietta-street, Cavendish-square, W.
1896. ABRAHAMS, BERTRAM LEWIS, M.B., 14, Welbeck-street, W.
1894. ACHARD, ALEXANDER LOUIS, M.D., 9, Blandford-street, Portman-square, W.
1890. ACKLAND, ROBERT CRAIG, M.R.C.S., 13, Savile-row, W.
1883. ACLAND, THEODORE DYKE, M.D., 74, Brook-street, Grosvenor-square, W.
c 2
1884. ADAM, JAMES, M.D., Malling-place, West Malling, Kent.
1889. ADAMS, JAMES, M.D., 4, Chiswick-place, Eastbourne.
1878. ADAMS, JOSIAH OAKE, M.D., Brook House, Upper Clapton, E.
1852. *ADAMS, WILLIAM, F.R.C.S., 7, Loudoun-road, St. John's-wood, N.W.
p, c 8, o, vp 3, ll.
1878. *ALLCHIN, WILLIAM HENRY, M.D., F.R.S.E., 5, Chandos-street, Cavendish-square, W. vp 2, o., *Hon. Librarian*.
1873. ALLEN, HENRY MARCUS, F.R.C.P. Edin., 17, Palmeira-square, Brighton.
1873. ALLFREY, CHARLES HENRY, M.D., Plas Newydd, St. Leonards-on-Sea.

1883. ALLINGHAM, HERBERT W., F.R.C.S., 25, Grosvenor-street, W. c 3.
1872. *ALLINGHAM, WILLIAM, F.R.C.S., 25, Grosvenor-street, W. c.
1894. ALSTON, WILLIAM EVELYN, M.B., Wheathampstead, Herts.
1860. ALTHAUS, JULIUS, M.D., 26, Queen Anne-street, W. c 5, § 3.
1885. ANDERSON, JOHN, M.D., C.I.E., 9, Harley-street, W. c 2. *Councillor*.
1889. ANDERSON, WILLIAM, F.R.C.S., 2, Harley-street, W. c.
1888. ANDREWES, FREDERICK WILLIAM, M.B., Highwood, Hampstead-lane, Highgate, N.
1869. ARMITAGE, SAMUEL HARRIS TATHAM, M.D., 39, Grosvenor-street, W.
1894. ARMSTRONG, WILLIAM, M.R.C.S., J.P., Thorncliffe, Buxton.
1894. ASHE, WILLIAM PERCY, M.D., 17, Alexander-square, S.W.
1873. ATKINSON, EDWARD, M.R.C.S., 93, Albion-street, Leeds.
1892. AYRES, CHARLES JAMES, M.D., 55A, Welbeck-street, W.
1873. BAGSHAW, FREDERIC, M.D., 35, Warrior-square, St. Leonards-on-Sea. c.
1871. BAILEY, GEORGE HEWLETT, M.R.C.S., 43, Queen Anne-street, W.
1892. BAILEY, HENRY FREDERICK, M.R.C.S., The Hollies, Lee-terrace, Lee, S.E. c 2.
1894. BAILEY, ROBERT COZENS, M.S., 21, Welbeck-street, W.
1891. BAILY, PERCY J., M.B., County Asylum, Hanwell, W.
1898. BAIN, WILLIAM, M.D., Shaythorpe, York-place, Harrogate.
1876. *BAKER, HENRY FRANCIS, F.R.C.S. Edin., 2, Mandeville-place, Manchester-square, W. c.
1890. BAKER, WILLIAM HENRY, M.R.C.S., 152, Westbourne-grove, W. *Councillor*.
1891. BALL, JAMES BARRY, M.D., 12, Upper Wimpole-street, W.
1881. BALLANCE, CHARLES ALFRED, M.S., 106, Harley-street, W. s 2, c 3.
1884. BANKS, W. MITCHELL, F.R.C.S., 28, Rodney-street, Liverpool. o, c.
1898. BARNARD, HAROLD LESLIE, M.S., 36, Hamilton-road, Highbury, N.
1859. *BARNES, JOHN WICKHAM, F.R.C.S., High Wickham, Walton-on-Naze. s 2, vp, c 3.
1883. *BARNES, ROBERT, M.D., *Honorary Fellow (q. v.)*.
1874. BARRETT, HOWARD, M.R.C.S., 49, Gordon-square, W.C. c 3.
1896. BARRETT, WALTER RUSSELL, M.R.C.S., 6, Chandos-street, Cavendish-square, W.
1884. BARROW, ALBERT BOYCE, F.R.C.S., 37, Wimpole-street, W. c.
1886. BARWELL, RICHARD, F.R.C.S., 55, Wimpole-street, W.
1884. BATEMAN, FREDERICK AUGUSTUS NEWTON, M.R.C.S., 4, Charles-street, St. James's-street, S.W.
1886. BATTERHAM, JOHN WILLIAMS, M.B., Bank House, Grand-parade, St. Leonards-on-Sea.
1888. BATTLE, WILLIAM HENRY, F.R.C.S., 2, Mansfield-street, W. c. *Hon. Secretary*.
1896. BAYLISS, RICHARD ARTHUR, M.R.C.S., 26, Gay-street, Bath.
1882. BEACH, FLETCHER, M.B., Winchester House, Kingston-hill, Surrey, and 64 Welbeck-street, W. c.

1887. BEALE, EDWIN CLIFFORD, M.B., 23, Upper Berkeley-street, W.
c. *Councillor*.
1891. BEALE, PEYTON T. B., F.R.C.S., 61, Grosvenor-street, W.
1880. BEEVOR, CHARLES EDWARD, M.D., 33, Harley-street, W. s 2, c.
Trustee.
1889. BEEVOR, Sir HUGH REEVE, Bart., M.D., 17, Wimpole-street, W.
1887. BENHAM, FREDERICK LUCAS, M.D., 93, Elizabeth-street, Eaton-square,
S.W. c 2. *Councillor*.
1881. BENNET, ROBERT OTTIWELL-GIFFORD, M.D., Tankerville House, Park-
place, Buxton.
1883. BENNETT, WILLIAM HENRY, F.R.C.S., 1, Chesterfield-street, Mayfair, W.
c.
1896. BERKELEY, COMYNS, M.B., 53, Wimpole-street, W.
1887. BERRY, JAMES, F.R.C.S., 60, Welbeck-street, W.
1873. BEVERIDGE, JAMES SPOWART, M.R.C.P. Edin.
1890. BIDWELL, LEONARD ARTHUR, F.R.C.S., 59, Wimpole-street, W.
1868. BIRD, GEORGE, M.D., 6, Windmill-hill, Hampstead, N.W.
1888. BIRD, MATTHEW MITCHELL, M.D., St. Mary's Hospital, W.
1850. *BIRKETT, JOHN, F.R.C.S., 1, Sussex-gardens, W. vp, c 6.
1895. BISHOP, EDWARD STANMORE, F.R.C.S., 316, Oxford-road, Manchester.
1883. BISS, CECIL YATES, M.D., 135, Harley-street, W.
1889. BISSHOPP, FRANCIS ROBERT BRYANT, M.B., Belvedere, Lonsdale-
gardens, Tunbridge Wells.
1886. *BLACK, WILLIAM GALL, F.R.C.S., 2, George-square, Edinburgh.
1897. BLACKER, GEORGE FRANCIS, M.D., 20, Weymouth-street, W.
1881. BLAKER, WALTER CAMPBELL, Bognor, Sussex.
1888. BLANC, LEON, M.D., Aix les Bains, France.
1871. *BLOXAM, JOHN ASTLEY, F.R.C.S., 75, Grosvenor-street, W. vp 2, s 2, c 3.
1867. BOND, THOMAS, F.R.C.S., 7, The Sanctuary, Westminster, S.W. c.
1879. BOTT, HENRY, M.R.C.S., Brentford, Middlesex.
1886. BOURNS, NEWCOME WHITELAW, M.D., 78, Redcliffe-gardens, S.W.
1886. BOUSTEAD, ROBINSON, M.D., Lieutenant-Colonel, R.A.M.C., c/o Messrs.
King & Co., 45, Pall Mall, S.W.
1895. BOWER, DAVID, M.D., Springfield House, Bedford.
1889. BOWLES, ROBERT LEAMON, M.D., 16, Upper Brook-street, W. c 2.
Councillor.
1895. BOYD, STANLEY, F.R.C.S., 134, Harley-street, W. *Councillor*.
1896. BRADLEY, JAMES EDWARD CAMPBELL, M.B., Greville House, Raynes
Park, Wimbledon.
1868. BRAIDWOOD, PETER MURRAY, M.D., Walton-street, Aylesbury. F.M.,
1877.
1869. BRAINE, FRANCIS WOODHOUSE, F.R.C.S., 67, Wimpole-street, W.
vp 2, s 2, c 3, SM.
1889. BRAINE, C. CARTER, F.R.C.S., 67, Wimpole-street, W.
1876. BREWER, ALEXANDER HAMPTON, M.R.C.S., 136, Richmond-road,
Dalston, N.E.

1896. BRIDGES, E. CHITTENDEN, M.B., Priory-mansions, Drayton-gardens, South Kensington, S.W.
1873. BRIDGWATER, THOMAS, M.B., LL.D., J.P., Harrow, Middlesex.
1893. BROADBENT, JOHN FRANCIS HARPIN, M.B., 35, Seymour-street, W.
1862. BROADBENT, Sir WILLIAM HENRY, Bart., M.D., F.R.S., 84, Brook-street, W. P, VP, O, LL, C 4.
1890. BROOK, WILLIAM FREDERICK, F.R.C.S., Longlands House, Swansea.
1898. BROOKE, GILBERT E., L.R.C.P., East Harbour, Turk's Island, West Indies.
1878. BROWN, ANDREW, M.D., 27, Lancaster-road, Belsize-park, N.W.
1889. BROWNE, GEORGE BUCKSTON, M.R.C.S., 80, Wimpole-street, W. C 2.
1873. BROWNE, LENNOX, F.R.C.S. Edin., 15, Mansfield-street, Portland-place, W.
1887. BRUCE, JOHN MITCHELL, M.D., 23, Harley-street, W. C 2. *Vice-President.*
1873. BRUNJES, MARTIN, M.R.C.S., 39, Blenheim-gardens, Willesden-green, N.W.
1862. BRUNTON, JOHN, M.D., 16, Endsleigh-street, Tavistock-square, W.C. VP, C 2.
1874. *BRUNTON, THOMAS LAUDER, M.D., F.R.S., 10, Stratford-place, W. LL, VP, C 4, SM.
1850. *BRYANT, THOMAS, F.R.C.S., 65, Grosvenor-street, W. P, VP, LL, S 2, C 4. *Trustee.*
1897. BUNCH, JOHN LE MARE, M.D., 6, Gordon-place, Gordon-square, W.C.
1885. *BUNNY, J. BRICE, M.R.C.S., Warre House, Bishops Lydeard, Taunton.
1886. BUTLER-SMYTHE, ALBERT CHARLES, F.R.C.S., 76, Brook-street, W.
1872. BYAS, EDWARD HEGLEY, M.R.C.S., 10, Cambridge-gate, Regent's Park, N.W.
1886. CAHILL, JOHN, M.D., 12, Seville-street, Lowndes-square, Hyde Park, S.W. C 3.
1892. CALDWELL, ROBERT, F.R.C.S., Captain, care of Messrs. Holt and Co., 17, Whitehall-place, S.W.
1893. CALEY, HENRY ALBERT, M.D., 24, Upper Berkeley-street, W.
1891. CALVERT, JAMES, M.D., St. Bartholomew's Hospital, E.C. *Hon. Secretary.*
1897. CAMERON, EWAN GORDON, M.R.C.S., 64, Great Portland-street, W.
1888. CAMPBELL, CHARLES M., M.D., *Travelling.*
1892. CARGILL, LIONEL VERNON, F.R.C.S., 15, Stratford-place, W.
1892. CARLESS, ALBERT, F.R.C.S., 10, Welbeck-street, W.
1882. CARPENTER, ARTHUR BRISTOWE, M.B., Wykeham House, Bedford Park, Croydon.
1889. CARR, JOHN WALTER, M.D., 19, Cavendish-place, W.
1897. CARRÉ, L. J. GERARD, M.D., The Uganda Railway, British East Africa.
1871. CARTER, ROBERT BRUDENELL, F.R.C.S., 31, Harley-street, W. P, VP, O, LL, C 4.

1889. CARTWRIGHT, ALEXANDER, M.R.C.S., 32, Old Burlington-street, W.
 1876. CARTWRIGHT, S. HAMILTON, *Travelling*.
 1876. *CATHCART, SAMUEL, M.R.C.P. Edin., 11, Hornsey-lane-gardens, Highgate, N.
 1889. CAUTLEY, EDMUND, M.D., 15, Upper Brook-street, W.
 1896. CHAPMAN, CHARLES WILLIAM, M.D., 21, Weymouth-street, W.
 1885. CHASSEAUD, WILLIAM, M.D., Smyrna, Asia Minor.
 1889. CHEYNE, WATSON, F.R.C.S., F.R.S., 75, Harley-street, W. IL, c.
 1877. *CHISHOLM, EDWIN, M.D., 82, Darlington-road, Sydney, New South Wales.
 1895. CHRISTMAS, ROBERT WILLIAM SAMUEL, M.R.C.S., 23, Hopton-road, Streatham, S.W.
 1871. CHURTON, THOMAS, M.D., 35, Park-square, Leeds. c.
 1875. CLARK, ANDREW, F.R.C.S., 71, Harley-street, W. c.
 1883. CLARKE, WILLIAM BRUCE, F.R.C.S., 51, Harley-street, W. c.
 1894. CLINCH, THOMAS ALDOUS, M.D., County Asylum, Winterton, Ferryhill, co. Durham.
 1879. *CLUTTON, HENRY HUGH, F.R.C.S., 2, Portland-place, W. VP 2, c 3.
 1894. COCHRANE, JAMES MACKEAND, M.D., 10, Weymouth-street, W.
 1849. *COCKLE, JOHN, M.D., The Lodge, West Molesey, Surrey. P, VP, O, L 3, c 3, SM.
 1893. COLE, ROBERT HENRY, M.D., Moorcroft, Hillingdon, Uxbridge.
 1887. COLLIER, WILLIAM, M.D., St. Mary's Entry, Oxford. c.
 1892. COLMAN, WALTER S., M.D., 22, Wimpole-street, W.
 1871. COOK, JOHN, M.D., 1, Nottingham-terrace, Regent's Park, N.W.
 1862. COOPER, ALFRED, F.R.C.S., 9, Henrietta-street, Cavendish-square, W. c 3, VP.
 1888. COOPER, ARTHUR, M.R.C.S., 20, Old Burlington-street, W.
 1894. COOPER, PETER, M.R.C.S., 35, Shooters-hill-road, Blackheath, S.E.
 1894. CORBOULD, VICTOR A. L. E., M.D., 43, Victoria-road, Kensington, W.
 1872. CORFIELD, WILLIAM HENRY, M.D., 19, Savile-row, W. c.
 1898. COTTON, HOLLAND JOHN, M.D., 2, Eccleston-houses, S.W.
 1891. COUMBE, JOHN BATTEN, F.R.C.S., 55, High-street, Lowestoft.
 1879. COUPLAND, SIDNEY, M.D., 16, Queen Anne-street, W. VP 2, c 3.
 1889. COURTNEY, GUY BUDD, M.B., 28, Augusta-road, Ramsgate.
 1873. CRAVEN, Sir ROBERT MARTIN, F.R.C.S., J.P., 14, Albion-street, Hull.
 1889. CRAWFORD, JAMES, M.D., Grosvenor-mansions, 80, Victoria-street, S.W.
 1871. CRICHTON-BROWNE, Sir JAMES, M.D., F.R.S., 61, Carlisle-mansions, S.W. P, O, c 2.
 1881. CRIPPS, WILLIAM HARRISON, F.R.C.S., 2, Stratford-place, W. c 2.
 1880. CRITCHETT, GEORGE ANDERSON, F.R.C.S. Edin., 21, Harley-street, W.
 1880. CROCKER, HENRY RADCLIFFE, M.D., 121, Harley-street. c 3.
 1881. CROSS, FRANCIS RICHARDSON, F.R.C.S., Worcester House, Clifton, Bristol.
 1890. CULLINGWORTH, CHARLES JAMES, M.D., 14, Manchester-square, W. c 3.
 1874. CUMBERBATCH, ALPHONSO ELKIN, F.R.C.S., 80, Portland-place, W. c 2.

1892. DA COSTA, FRANCIS XAVIER, F.R.C.S., Bombay, India.
1897. DAKIN, WILLIAM RADFORD, M.D., 18, Grosvenor-street, W.
1894. DALBY, JOHN LYTTLETON, M.R.C.S., 20, Buckingham-road, Brighton.
1871. DALBY, SIR WILLIAM BARTLETT, F.R.C.S., 18, Savile-row, W. p, c 2.
1881. DALLAWAY, DENNIS JOSEPH WILLIAM, L.R.C.P. Edin., Piccadilly Club, W.
1885. DAVIES-COLLEY, JOHN NEVILLE COLLEY, F.R.C.S., 36, Harley-street, W. c 3.
1890. DAVIS, HENRY, M.R.C.S., 60, Queen Anne-street, W.
1889. *DAVISON, JAMES, M.D., "Strete Place," Bath-road, Bournemouth.
1897. DAVISON, RASHELL, M.D., Vernham, New Malden, Surrey.
1880. DAVSON, SMITH HOUSTON, M.D., Campden Villa, 203, Maida-vale, W. c 3.
1868. *DAVY, RICHARD, F.R.C.S., F.R.S.E., Burstone House, Bow, North Devon. vp, s 2, sm, § 2.
1876. DAWES, RICHARD ST. MARK, M.R.C.S., Gawler, South Australia.
1897. DAWSON, BERTRAND, M.D., 64, Harley-street, W.
1880. DAWSON, YELVERTON, M.D., Heathland, Southbourne-on-Sea, Christchurch, Hants.
1894. DEAN, HENRY PERCY, M.S., 69, Harley-street, W.
1883. DENT, CLINTON THOMAS, F.R.C.S., 61, Brook-street, Grosvenor-square, W. c 3.
1897. DES VŒUX, HAROLD A., M.D., 8, James-street, Buckingham-gate, S.W.
1891. DIVER, EBENEZER, M.D., Yately House, Kenley, Surrey.
1893. DOCKRELL, MORGAN, M.D., 9, Cavendish-square, W.
1885. DODD, HENRY WORK, F.R.C.S., 136, Harley-street, W.
1882. DOLAN, THOMAS MICHAEL, M.D., Horton House, Halifax. fm 1882.
1881. DORAN, ALBAN HENRY GRIFFITHS, F.R.C.S., 9, Granville-place, W. c 3.
- Hon. Sec. Foreign Correspondence. Orator.*
1898. DOUGLAS, JOHN L., M.D., 42, Central-hill, Norwood, S.E.
1890. DOUGLAS, WILLIAM, M.D.
1871. DOWSE, THOMAS STRETCH, M.D., 14, Welbeck-street, W. § 3, c 3.
1897. *DRAGE, LOVELL, M.D., Hatfield, Herts.
1877. DREW, JOHN HENRY, M.R.C.S., 38, Eastbourne-terrace, Hyde Park, W. c 6.
1886. DUCKWORTH, SIR DYCE, M.D., 11, Grafton-street, Piccadilly, W. c.
1848. *DUNCAN, JAMES, M.B., 8, Henrietta-street, Covent Garden, W.C.
1884. DUNCAN, WILLIAM, M.D., 6, Harley-street, W.
1884. DURHAM, FREDERICK, F.R.C.S., 82, Brook-street, W.
1895. EALAND, HUGH FAWSIT, L.R.C.P. Edin., The Moat, Puckeridge, Herts.
1896. EARLE, WALTER GEORGE, M.R.C.S., 44, Upper Grosvenor-road, Tunbridge Wells.
1891. EASTES, THOMAS, M.D., 3, Shakespeare-terrace, Folkestone.
1893. ECCLES, ARTHUR SYMONS, M.B., 23, Hertford-street, Mayfair, W.
1895. ECCLES, WILLIAM MCADAM, M.S., 124, Harley-street, W.

1892. EDDOWES, ALFRED, M.D., 28, Wimpole-street, W.
 1860. EDMUNDS, JAMES, M.D., 28, Dover-street, W.
 1880. EDWARDS, FREDERICK SWINFORD, F.R.C.S., 55, Harley-street. W. c 3.
 1897. ELGWOOD, CHARLES REGINALD, M.D., 8, Clarence-villas, Windsor.
 1868. ELLIOTT, GEORGE FREDERICK, M.D., 1, Albion-street, Hull.
 1882. ELLIOTT, THOMAS, M.D., Monson-place, Tunbridge Wells.
 1889. EMBLETON, DENNIS CAWOOD, M.R.C.S., St. Wilfrid's, St. Michael's-road, Bournemouth.
 1883. ENGLISH, EDGAR, M.R.C.S., 1, Thorne-road, Doncaster.
 1880. ENGLISH, THOMAS JOHNSTON, M.D., 128, Fulham-road, S.W.
 1889. ESLER, ROBERT, M.D., 4, Queen's-road, Peckham, S.E.
 1891. EUAN-SMITH, EUAN McLAURIN, M.R.C.S., 253, Cromwell-road, S.W.
 1894. EVANS, WILLMOTT HENDERSON, F.R.C.S., 13, Taviton-street, Gordon-square, W.C.
 1898. EVE, FREDERIC S., F.R.C.S., 125, Harley-street, W.
 1883. EWART, Sir JOSEPH, M.D., J.P., Retired Dep. Surgeon-General, Bengal Army, Bewcastle, Dyke-road, Brighton. c.
 1877. EWART, WILLIAM, M.D., 33, Curzon-street, Mayfair, W. c 2.
Councillor.
1884. FARDON, EDWARD ASHBY, M.R.C.S., Middlesex Hospital, W.
 1873. FAYRER, Sir JOSEPH, Bart., K.C.S.I., LL.D., M.D., F.R.S., 16, Devonshire-street, Portland-place, W. p, vp, LL, SM, O, c.
 1896. FAYRER, JOSEPH, M.D., Captain R.A.M.C., India.
 1884. FENTON, FREDERICK ENOS, F.R.C.S., 33, Welbeck-street, W.
 1888. FENWICK, BEDFORD, M.D., 20, Upper Wimpole-street, W.
 1885. FENWICK, EDWIN HURRY, F.R.C.S., 14, Savile-row, W. c.
 1887. FERRIER, DAVID, M.D. Edin., F.R.S., 34, Cavendish-square, W. c.
 1878. FIELD, GEORGE, M.R.C.S., 34, Wimpole-street, W. c.
 1894. FISHER, FREDERICK CHARLES, F.R.C.S., King's Langley, Herts.
 1876. FISHER, FREDERIC RICHARD, F.R.C.S., 18, Wimpole-street, W.
 1894. FLEMING, SAMUEL, M.B., 37, Hyde Park-gate, W.
 1884. FLINT, ARTHUR, M.D., J.P., Westgate Lodge, Westgate-on-Sea.
 1878. *FONMARTIN, HENRY DE, M.D., 26, Newberry-terrace, Lower Bullar-street, Southampton.
 1893. FORBES, NORMAN HAY, F.R.C.S. Edin., Drumminor, Tunbridge Wells.
 1884. FOTHERBY, HENRY ARTHUR, M.R.C.S.
 1879. FOWLER, JAMES KINGSTON, M.D., 35, Clarges-street, Mayfair, W. s 2, c. *Vice-President.*
 1873. FOX, ARTHUR EDWARD WELLINGTON, M.B., C.M., 16, Gay-street, Bath. c.
 1887. FOX, FORTESCUE, M.D., Strathpeffer Spa, Ross-shire.
 1871. FOX, FRANCIS, M.R.C.S., 70, Wimpole-street, W. c 3.
 1885. FOX, R. HINGSTON, M.D., 23, Finsbury-square, E.C.
 1879. FOX, THOMAS COLCOTT, M.B., 14, Harley-street, W. s 2. c 2.

1868. FREER, ALFRED, J.P., Stourbridge, Worcestershire.
1896. FREYER, P. JOHNSTON, M. Ch., Surgeon-Lieut.-Colonel (*retired*), 46, Harley-street, W.
1886. FRITH, BAPTIST GAMBLE, M.B., 29, Cornwallis-gardens, Hastings.
1884. FROST, WILLIAM ADAMS, F.R.C.S., 30, Cavendish-square, W., c 2.
1894. FYFFE, WILLIAM KINGTON, M.B., New Zealand.
1895. GALLOWAY, JAMES, M.D., 54, Harley-street, W.
1862. *GANT, FREDERICK JAMES, F.R.C.S., *Honorary Fellow* (q. v.).
1847. *GARROD, SIR ALFRED BARING, M.D., F.R.S., 10, Harley-street, W.
P, VP 2, LL, O, C 9.
1887. GARROD, ARCHIBALD EDWARD, M.D., 9, Chandos-street, Cavendish-square, W. c 3.
1893. GARSON, JOHN GEORGE, M.D., 64, Harley-street, W.
1891. GASTER, AUGHEL, M.D., 68, Greencroft-gardens, South Hampstead, N.W.
1887. GAY, JOHN, M.R.C.S., 119, Upper Richmond-road, Putney, S.W.
1856. *GIBBON, SEPTIMUS, M.B., 39, Oxford-terrace, W.
1882. GIBBONS, ROBERT ALEXANDER, M.D., 29, Cadogan-place, S.W.
1893. GIBSON, CHARLES, M.D., Vanderbilt-court, Harrogate.
1897. GIBSON, GEORGE ALEXANDER, M.D., 17, Alva-street, Edinburgh.
1881. GIFFARD, DOUGLAS W., M.R.C.S., 5, Pavilion-parade, Brighton.
1867. GILL, WILLIAM, M.R.C.S., 11, Russell-square, W.C. c.
1894. GILL, RICHARD, F.R.C.S., 17, Wigmore-street, W.
1869. *GODSON, CLEMENT, M.D., 9, Grosvenor-street, W. VP, C 3, S 2, SM.
1873. GOODSALL, DAVID HENRY, F.R.C.S., 17, Devonshire-place, Portland-place, W. VP 2. C, S 2, SM, CFC 7. *Treasurer; Chairman, House and Finance Committee.*
1892. GORDON, ROBERT JOHN, M.B., Kwangchengtse Newchwang, North China.
1878. *GOULD, ALFRED PEARCE, M.S., 10, Queen Anne-street, W. VP 2, S 2, C 3, O. *Councillor.*
1896. GOW, WILLIAM JOHN, M.D., 27, Weymouth-street, W.
1876. GOWERS, SIR WILLIAM RICHARD, M.D., F.R.S., 50, Queen Anne-street, W. VP, C, SM, LL. FM. 1893.
1887. GRANT, JAMES EDWARD RONEY, M.R.C.S., 2, Charing Cross-chambers, Duke-street, Adelphi, W.C.
1896. GRANT, J. DUNDAS, M.D., 8, Upper Wimpole-street, W.
1881. GREEN, THOMAS HENRY, M.D., 74, Wimpole-street, W. c 2. VP.
1886. GREVES, EDWIN HYLIA, M.D., Rodney House, Bournemouth.
1873. GRIEVE, the Hon. ROBERT, M.D., C.M.G., British Guiana.
1875. GRIFFITH, G. DE GORREQUER, M.R.C.S., 34, St. George's-square, S.W.
1885. GRIFFITHS, CHARLES THOMAS, L.R.C.P., 125, Soho-hill, Birmingham.
1884. GRIFFITHS, HERBERT TYRRELL, M.B., 5, Kensington-square, W.

1880. GRISTOCK, WILLIAM, M.D. Lond., 6, Finchley-road, N.W.
 1893. GUBB, ALFRED SAMUEL, M.D. Paris, 29, Gower-street, W.C.
 1891. GUTHRIE, LEONARD G., M.D., 15, Upper Berkeley-street, W.
1886. HABERSHON, S. HERBERT, M.D., 70, Brook-street, Grosvenor-square, W.
 1891. HADLEY, WILFRED J., M.D., 58, Harley-street, W.
 1887. HAIG, ALEXANDER, M.D., 7, Brook-street, W.
 1881. HALL, CHARLES ROSS, M.R.C.S., Hatfield, Herts.
 1874. *HALL, FRANCIS DE HAVILLAND, M.D., 47, Wimpole-street, W. VP 2,
 LL, C 7, S 2, SM.
 1879. HAMILTON, SETON GUTHRIE.
 1891. HANDFIELD-JONES, MONTAGU, M.D., 35, Cavendish-square, W.
 1850. *HARE, CHARLES JOHN, M.D., *Honorary Fellow (q.v.)*. *Trustee*.
 1891. HAROLD, JOHN PATRICK, M.R.C.S., 91, Harley-street, W.
 1882. HARPER, GERALD SAMUEL, M.B., 40, Curzon-street, Mayfair, W. C.
 1895. HARRISON, CHARLES JAMES, M.D., Rossetti-mansions, Chelsea, S.W.
 1871. HARRISON, REGINALD, F.R.C.S., 6, Lower Berkeley-street, Portman-square. P, VP 2, LL, C 2.
 1883. *HARTRIDGE, GUSTAVUS, F.R.C.S., 12, Wimpole-street, W.
 1882. HARVEY, JOHN STEPHENSON SELWYN, M.D., 1, Astwood-road, Cromwell-road, S.W.
 1882. HASLAM, WILLIAM FREDERICK, F.R.C.S., 54, Newhall-street, Birmingham. C 3.
 1852. *HAWARD, EDWIN, M.D., 34A, Gloucester-place, W.
 1889. HAWKINS, FRANCIS HENRY, M.B., 73, London-street, Reading.
 1897. HAYMAN, ALBERT STEPHEN, L.R.C.P., 26, Welbeck-street, W.
 1890. HEBB, FREDERICK THEODORE, M.R.C.S., 98, Oakley-street, Chelsea-embankment, S.W.
 1897. HEDLEY, WILLIAM SNOWDON, M.D., 8, Mansfield-street, W.
 1891. HENSMAN, FRANK, M.R.C.S., Lieut.-Colonel, R.A.M.C.
 1883. HERMAN, GEORGE ERNEST, M.B., 20, Harley-street, W.
 1879. HERON, GEORGE ALLAN, M.D., 57, Harley-street, Cavendish-square, W. C 3.
 1883. HERSCHELL, GEORGE A., M.D., 27, Queen Anne-street, W.
 1883. HEWITT, FREDERICK WILLIAM, M.D., 14, Queen Anne-street, W. C.
 1895. HILL, ERNEST, M.R.C.S., Western Hospital, Fulham, S.W.
 1892. HILL, WILLIAM, M.D., 28, Weymouth-street, W.
 1873. HOBSON, WILLIAM HENRY, M.R.C.S., 38, Leinster-gardens, Hyde Park, W.
 1895. HODGSON, GEORGE G. GRAHAM, M.R.C.S., The Cedars, Chertsey, Surrey.
 1879. HOGG, ARTHUR JOHN, M.R.C.S., Leslie Lodge, Haved-green, Ealing, W.
 1884. HOLLAND, CHARLES EDWARD, M.B., "Airdrie," The Avenue, Kew Gardens, Surrey.
 1868. HOLMAN, CONSTANTINE, M.D., 26, Gloucester-place, Portman-square, W. VP 2, C 4. *Councillor*.
 1897. HOLROYDE, JOHN, M.R.C.S., Camden House, Chatham.

1881. HOOD, DONALD WILLIAM CHARLES, M.D., 43, Green-street, W. c 2.
 1896. HORSLEY, VICTOR, F.R.C.S., F.R.S., 25, Cavendish-square, W. F.M.,
 1896.
1883. *HOVELL, T. MARK, F.R.C.S. Edin., 105, Harley-street, W.
 1886. HUDDART, CUTHBERT HENRY COOKE, M.B., Shoyswell Manor, Etching-
 ham, Sussex.
1890. HUGHES, EDGAR, F.R.C.S., 91, Onslow-gardens, South Kensington, S.W.
 1864. HUME, FREDERICK HENRY, M.D., 53, Devonshire-street, Islington, N.
 1884. HUNTER, SIR GUYER, M.D., K.C.M.G., 21, Norfolk-crescent, Hyde
 Park, W.
1889. HUNTER, WILLIAM, M.D., 103, Harley-street, W.
 1881. HUTCHINSON, JONATHAN, F.R.C.S., F.R.S., 15, Cavendish-square. P, LL,
 c 5, o.
1892. HUTCHINSON, JONATHAN, Jun., F.R.C.S., 1, Park-crescent, Portland-
 place, W.
1875. HUTCHINSON, SAMUEL JOHN, M.R.C.S., 64, Brook-street, W.
 1897. HUTCHISON, ROBERT, M.D., Toynbee Hall, Commercial-road, E.
 1895. HYDE, SAMUEL, M.D., Lismore House, Buxton, Derbyshire.
1889. I'ANSON, WILLIAM ANDREW, M.R.C.S., Denton Hall, Newcastle-on-Tyne.
 1891. ISAAC, GEORGE WASHINGTON, M.B., 75, Gower-street, W.C.
1884. *JACKSON, FREDERICK WILLIAM, M.D., Yorkgate House, Broadstairs.
 1868. JACKSON, JOHN HUGHLINGS, M.D., F.R.S., 3, Manchester-square, W.
 P, VP, o, c 5.
1887. JAMISON, ARTHUR ANDREW, M.D., 18, Lowndes-street, Belgrave-
 square, S.W.
1884. JENNINGS, CHARLES EGERTON, M.D., 48, Seymour-street, W.
 1886. JERVIS, ARTHUR, M.D., 52, York-street, Portman-square, W.
 1883. JESSOP, WALTER HAMILTON, F.R.C.S., 73, Harley-street, W.
 1893. JOHNSTON, GEORGE FRANCIS, M.D., 6, Manchester-square, W.
 1886. JOHNSTON, JAMES, M.D., 53, Prince's-square, Bayswater, W.
 1893. JOLL, BOYD BURNETT, M.B., 27, Bedford-square, W.C.
 1888. JONES, ARTHUR HENRY, M.D., 45, Sheep-street, Northampton.
 1893. JONES, HENRY LEWIS, M.D., 61, Wimpole-street, W.
 1890. JONES, H. MACNAUGHTON, M.D., 141, Harley-street, Cavendish-square,
 W.
1888. JONES, JOHN TALFOURD, M.B., Rosebank, South-terrace, Eastbourne,
 Sussex.
1892. *JONES, ROBERT, F.R.C.S., 11, Nelson-street, Liverpool.
 1896. JONES, ROBERT, M.D., Claybury Asylum, Woodford Bridge, Essex.
 1893. JOULE, JOHN SAMUEL, M.D., 32, Maida-hill West, W.
 1877. JULER, HENRY EDWARD, F.R.C.S., 23, Cavendish-square, W. c 2.
1889. KAUFFMANN, OTTO JACKSON, M.D., 22, Broad-street, Birmingham.
 1891. KEEGAN, DENIS FRANCIS, M.D., Brigade Surgeon-Lieutenant-Colonel,
 East India United Service Club, St. James's-square, S.W.

1896. KEEPE, A. CORRIE, M.C., 7, Lower Seymour-street, Portman-square, W.
1884. KEETLEY, CHARLES BELL, F.R.C.S., 56, Grosvenor-street, W. c 3.
1847. *KELLOCK, WILLIAM BERRY, M.D., 94, Stamford-hill, N.
1891. KELSON, WILLIAM HENRY, M.D., 46, Watling-street, E.C.
1890. KER, HUGH RICHARD, F.R.C.S. Edin., Tintern, 2, Balham Hill, S.W.
1884. KERR, NORMAN, M.D., 1, Hamilton-terrace, Regent's Park, N.W. c 3.
1881. KESER, JEAN SAMUEL, M.D., 11, Harley-street, W. c 2, § 3.
1876. KEY, AUGUSTUS COOPER, M.D., 30, Wilton-place, S.W. c 2.
1886. KIDD, PERCY, M.D., 60, Brook-street, W. c 2.
1895. KING, ARTHUR, M.B., Belmont, Station-road, Watford, Herts.
1897. KINGSCOTE, ERNEST, M.B., 31, Lower Seymour-street, W.
1883. KNAPTON, GEORGE, L.R.C.P. Edin., Craven House, Moss-lane, Manchester.
1898. LACK, H. LAMBERT, M.D., 48, Harley-street, W.
1889. LAKE, RICHARD, F.R.C.S., 19, Harley-street, W.
1895. LANE, JAMES ERNEST, F.R.C.S., 46, Queen Anne-street, W.
1881. LANGTON, JOHN, F.R.C.S., 62, Harley-street, W. c 2.
1882. LARKIN, F. COLET, M.B., *Travelling*.
1890. LAW, EDWARD, M.D. Edin., 35, Harley-street, W.
1890. LAWRIE, EDWARD, M.B. Edin., Surgeon-Lieutenant-Colonel, Bengal Army, The Residency, Hyderabad.
1858. *LAWSON, GEORGE, F.R.C.S., 12, Harley-street, W. vp 2, c 3.
1893. LEE, E. SAMUEL, M.D., 31, Pevensey-road, St. Leonards-on-Sea.
1887. LEGGATT, CHARLES ASHLEY SCOTT, M.D., 2, Walton-place, S.W.
1894. LENDON, EDWIN HARDING, M.B. (Oxon.), 162, Holland Park Avenue, W.
1886. LEWERS, ARTHUR HAMILTON NICHOLSON, M.D. Lond., 72, Harley-street, W.
1895. LEWIS, ERNEST WOOL, M.R.C.S., 12, King-street, Hammersmith, W.
1867. LICHTENBERG, GEORGE, M.D., 47, Finsbury-square, E.C. c 2.
1898. LING, MAURICE EDWARD, M.R.C.S., 5, West Halkin-street, S.W.
1878. LISTER, the Right Hon. Lord, D.C.L., LL.D., F.R.C.S., President of the Royal Society, 12, Park-crescent, Portland-place. o.
1896. LISTER, THOMAS D., F.R.C.S., 95, Wimpole-street, W.
1889. LITTLE, ERNEST MUIRHEAD, F.R.C.S., 40, Seymour-street, Portman-square, W.
1889. LITTLE, FLETCHER, M.D., 32, Harley-street, W.
1878. LOCKWOOD, CHARLES BARRETT, F.R.C.S., 19, Upper Berkeley-street, W. vp 2, c 2, s 2.
1873. LOE, JAMES SCARBOROUGH, Grange-avenue, Chapel-town-road, Leeds.
1881. LORIMER, G., M.D., 9, Terrace-road, Buxton, Derbyshire.
1868. LOWE, JOHN, M.D., J.P., 4, Gloucester-place, Portman-square, W. c 3.

1897. LUFF, ARTHUR PEARSON, M.D., 31, Weymouth-street, W.
 1889. LUNN, HENRY SIMPSON, M.D., 5, Endsleigh-gardens, N.W.
 1889. LUSH, PERCY, M.B., 4, Maresfield-gardens, Hampstead, N.W.
1884. MACBRYAN, HENRY CRAWFORD, L.R.C.P. Edin., Kingsdown House, Box, Wilts.
 1894. McCANN, FREDERICK JOHN, M.B., 5, Curzon-street, Mayfair, W.
 1885. McCONNEL, HENRY WILSON, M.B., Great Ryburgh, Fakenham, Norfolk.
 1871. MACCORMAC, Sir WILLIAM, Bart., 13, Harley-street, W., President of the Royal College of Surgeons. P, VP, § 2, c 4, o.
 1885. MACGEAGH, THOMAS EDWIN FOSTER, M.D., 23, New Cavendish-street, W.
 1896. MACGREGOR, PATRICK FRASER, M.D., Cambridge Park, Wanstead, Essex.
 1873. McHARDY, MALCOLM MACDONALD, F.R.C.S. Edin., 5, Savile-row, W.
 1882. MACKELLAR, ALEXANDER OBERLIN, F.R.C.S., 79, Wimpole-street, W.
 1894. MACKENZIE, HECTOR WILLIAM GAVIN, M.D., 59, Welbeck-street, W.
Councillor.
 1880. MACKENZIE, STEPHEN, M.D., 18, Cavendish-square, W. VP 2, c 4, LL.
 1881. MACLAGAN, THOMAS JOHN, M.D., 9, Cadogan-place, S.W. c 3.
 1861. MACLAREN, ALEXANDER CONNELL, 60, Harley-street, W.
 1891. MACLEAN, ALLAN, 10, Mitre-court Chambers, Temple, E.C.
 1887. MACREADY, JONATHAN FOSTER CHRISTIAN HORACE, F.R.C.S., 42, Devonshire-street, W. c 2.
 1883. MADDICK, EDMUND DISTIN, F.R.C.S. Edin., 2, Chandos-street, Cavendish-square, W.
 1885. MAGUIRE, ROBERT, M.D., 4, Seymour-street, W. c 2, s 2. *Councillor.*
 1898. MAHOMED, ARTHUR GEORGE SULIEMAN, M.R.C.S., Astolat, Poole-road, Bournemouth.
 1890. MALCOLM, JOHN DAVID, F.R.C.S. Edin., 13, Portman-street, Portman-square, W.
 1893. MALCOLM, WILLIAM A., M.B., Oak House, 421, Holloway-road, N.
 1887. MANTLE, ALFRED, M.D., Savile-place, Halifax.
 1888. MAPOTHER, EDWARD DILLON, M.D., 32, Cavendish-square, W. c 3.
 1898. MARRIOTT, CHARLES WILLIAM, M.D., Aubrey House, Bath-road, Reading.
 1891. MARSH, HOWARD, F.R.C.S., 30, Bruton-street, W.
 1892. MARSHALL, ARTHUR LUMSDEN, M.B., 56, Rectory-road, N.
 1869. MARSHALL, WILLIAM, M.D., Torrieburn, Barnes, S.W. c.
 1889. MARTIN, JOHN MICHAEL HARDING, M.D., Arnheim, Blackburn, Lancashire.
 1890. MARTIN, SIDNEY, M.D., F.R.S., 10, Mansfield-street, W. *Councillor.*
 1893. MASON, GEORGE ARMSTRONG, M.B., 45, George-street, Portman-square, W.
 1884. MATHESON, FARQUHAR, M.B., 11, Soho-square, W.
 1891. MAUDE, ARTHUR, M.R.C.S., Winterton House, Westerham, Kent.

1892. MAY, CHICHESTER GOULD, M.D., 26, Walton-street, Pont-street, S.W.
1891. MAY, WILLIAM PAGE, M.D., 49, Welbeck-street, W.
1884. MEREDITH, WILLIAM APPLETON, F.R.C.S., 21, Manchester-square, W. c.
1897. MILES, WILLIAM ERNEST, F.R.C.S., St. Bartholomew's Hospital, E.C.
1895. MONIER-WILLIAMS, MONTAGU SNEADE FAITHFULL, M.R.C.S., 54, Onslow-gardens, S.W.
1883. MOORE, THOMAS, F.R.C.S., 6, Lee-terrace, Blackheath, S.E.
1883. MORGAN, JOHN HAMMOND, F.R.C.S., 68, Grosvenor-street, W. LL, s 2, c. *Vice-President.*
1893. MORISON, ALEXANDER, M.D., 14, Upper Berkeley-street, W.
1871. MORLEY, ALEXANDER, 42, Albemarle-street, W.
1895. MORLEY, FRANK, M.R.C.S., 42, Albemarle-street, W.
1881. MORRIS, HENRY, F.R.C.S., 8, Cavendish-square, W. c.
1878. MORRIS, MALCOLM ALEXANDER, F.R.C.S. Edin., 8, Harley-street, W. c 2.
1882. MORTON, ANDREW STANFORD, F.R.C.S., 133, Harley-street, W.
1884. *MOULLIN, CHARLES WILLIAM MANSELL, F.R.C.S., 69, Wimpole-street, W.
1893. MURPHY, GEORGE WYNDHAM, M.B., J.P., South Africa.
1894. MURRAY, CHARLES STORMONT, L.R.C.S. Edin., 85, Gloucester-place, W.
1884. MURRAY, FRED., M.B., Durbanville, Cape Colony, South Africa.
1890. MURRAY, GEORGE, M.R.C.S., 34, Wimpole-street, Cavendish-square, W.
1886. MURRAY, HUBERT MONTAGUE, M.D., 25, Manchester-square, W. c 3.
1879. MURRELL, WILLIAM, M.D., 17, Welbeck-street, W.
1893. NAPIER, ALEXANDER DISNEY LEITH, M.D., General Hospital, Adelaide, South Australia.
1894. NAUMANN, J. C. FRANCIS, M.D., 125, Gower-street, W.C.
1877. NESBITT, DAWSON, M.D., 1, Norfolk-square, Hyde Park, W.
1889. *NIAS, J. BALDWIN, M.D., 5, Rosary-gardens, South Kensington, S.W. *Councillor.*
1880. NIX, EDWARD JAMES, M.D., 11, Weymouth-street, W. c 3.
1887. OAKLEY, ADAM ROBERT HAMILTON, L.R.C.P., Treath, Hornchurch, Essex.
1894. O'CALLAGHAN, ROBERT, F.R.C.S.I., 137, Harley-street, W.
1885. OGILVIE, LESLIE, M.B., 46, Welbeck-street, W.
1884. OGLE, CHARLES JOHN, M.R.C.S., 1, Cavendish-place, W.
1884. OLIVER, GEORGE, M.D., West End Park, Harrogate.
1892. OPENSHAW, THOMAS HORROCKS, F.R.C.S., 16, Wimpole-street, W.
1875. ORD, WILLIAM MILLER, M.D., 37, Upper Brook-street, W. p, o, c 4.
1892. ORD, WILLIAM WALLIS, M.D., The Hall, Salisbury.
1887. ORMEROD, JOSEPH ARDERNE, M.D., 25, Upper Wimpole-street, W. c.

1889. ORTON, GEORGE HUNT, M.B., 1A, Campden Hill-road, Kensington, W.
 1884. ORWIN, ARTHUR WIGELSWORTH, M.D., 15, Weymouth-street, Portland-place, W.
 1894. OSBORN, SAMUEL, F.R.C.S., J.P., Maisonnnette, Datchet, near Windsor.
 1880. OSWALD, JAMES WADDELL JEFFREYS, M.D., 245, Kennington-road, S.E. c 3.
 1883. OWEN, CHARLES J. RAYLEY, 14, Devonshire-terrace, Hyde Park, W. c.
 1878. *OWEN, EDMUND, F.R.C.S., 64, Great Cumberland-place, W. o, VP 2, c 3, s 2, SM, LL. *President. Trustee.*
 1881. OWEN, ISAMBARD, M.D., 40, Curzon-street, Mayfair, W. s 2, c 4.
 1880. PALMER, FREDERICK STEPHEN, M.D., Compton Lodge, East Sheen, S.W.
 1882. PALMER, WILLIAM PITT, M.B., Kirkham, Babbacombe, Torquay.
 1877. *PARAMORE, RICHARD, M.D., 2, Gordon-square, W.C.
 1881. PARROTT, EDWARD JOHN, M.R.C.S., The Thorn, Hayes, Middlesex.
 1871. PARSONS, FRANCIS HENRY, M.D., "The Hurst," West Worthing.
 1885. PASTEUR, WILLIAM, M.D., 4, Chandos-street, Cavendish-square, W. s 2, c. 2.
 1872. PATTEN, CHARLES ARTHUR, M.R.C.S., Marpool House, Ealing, W.
 1891. PATTERSON, CHARLES SUMNER, M.B., 40, Highbury-place, N.
 1890. PATTISON, EDWARD SETON, M.R.C.S., Granville House, Fulham-road, S.W.
 1861. PAUL, JOHN HAYBALL, M.D., 34, The Terrace, Camberwell, S.E. c 6.
 1854. *PAVY, FREDERICK WILLIAM, M.D., F.R.S., 35, Grosvenor-street, W. VP, LL, C.
 1881. *PEACEY, WILLIAM, M.D., Rydal Mount, St. John's-road, Eastbourne.
 1883. PECK, EDWARD GEORGE, M.A., The Willows, Queensbury, Bradford, Yorks.
 1871. PEDLER, GEORGE HENRY, M.R.C.S., 6, Trevor-terrace, Knightsbridge, S.W.
 1883. PERIGAL, ARTHUR, M.D., New Barnet, Herts.
 1878. PHILIPPS, SUTHERLAND REES, M.D., St. Ann's Heath, Virginia Water, Berks.
 1894. PHILLIPPS, WILLIAM ALFRED, M.D., 13, John-street, Berkeley-square, W.
 1876. PHILLIPS, CHARLES DOUGLAS FERGUSON, M.D., F.R.S.E., 10, Henrietta-street, Cavendish-square, W. c 3.
 1873. PHILLIPS, GEORGE RICHARD TURNER, M.R.C.S., 24, Palace-court, Bayswater-hill, W. c 2.
 1885. PHILLIPS, JOHN, M.D., 68, Brook-street, W.
 1883. PHILLIPS, SIDNEY PHILIP, M.D. Lond., 62, Upper Berkeley-street, Portman-square, W.
 1883. PICK, THOMAS PICKERING, F.R.C.S., 18, Portman-street, W. c 2.
 1883. PITTS, BERNARD, F.R.C.S., 109, Harley-street, Cavendish-square. c 5, s 2.
 1890. POPE, HARRY CAMPBELL, M.D. Lond., 280, Goldhawk-road, Shepherd's Bush, W.

1873. PORT, HEINRICH, M.D., 48, Finsbury-square, E.C. § 3. c.
1871. POWELL, Sir RICHARD DOUGLAS, Bart., M.D., 62, Wimpole-street, W.
P, VP, C 5, O.
1891. POWELL, WILLIAM WYNDHAM, F.R.C.S., 16, Old Burlington-street,
W.
1891. PRESTON, THEODORE JULIAN, M.R.C.S., Fleet Surgeon, Royal Navy,
238, Portsdown-road, Maida Vale, W.
1891. *PRICKETT, MARMADUKE, M.D., 27, Oxford-square, W.
1885. PRINGLE, JOHN JAMES, M.B., 23, Lower Seymour-street, W.
1889. PRITCHARD, OWEN, M.D., 41, Gloucester-square, W.
1898. PROBYN-WILLIAMS, ROBERT JAMES, M.D., 22, Duke-street, Portland-
place, W.
1892. RAMSAY, JAMES, M.D., High Peter-gate, York.
1894. RANKIN, GUTHRIE, M.D., 4, Chesham-street, Belgravia, S.W.
1881. RANKING, JOHN EBENEZER, M.D., Hanover House, Tunbridge Wells.
1894. RAYNER, HERBERT EDWARD, F.R.C.S., Harcourt House, Camberley
Surrey.
1859. *RAYNER, JOHN, M.D., Swaledale House, Highbury-quadrant, N.
1890. REID, JOHN, M.B., Clanmurray, Dromore, co. Down.
1882. REID, THOMAS WHITEHEAD, M.D., 34, St. George's-place, Canterbury.
1872. *RICHARDS, JOSEPH PEEKE, M.R.C.S., 6, Freeland-road, Ealing, W.
C 3.
1868. *ROBERTS, DAVID LLOYD, M.D., F.R.S.E., 11, St. John's-street, Man-
chester.
1857. *ROBERTS, DAVID WATKIN, M.D., 56, Manchester-street, W.
1885. ROBERTS, EDWARD COLERIDGE, M.R.C.S., Southgate, N.
1874. ROBERTS, FREDERICK THOMAS, M.D., 102, Harley-street, W. VP 2,
LL, C.
1889. ROBERTS, Sir WILLIAM, M.D., F.R.S., 8, Manchester-square, W. c.
1884. ROBINSON, ARTHUR HENRY, M.D., Mile End Infirmary, Bancroft-
road, E.
1897. ROBINSON, HENRY BETHAM, M.S., 1, Upper Wimpole-street, W.
1896. ROBSON, A. MAYO, F.R.C.S., 7, Park-square, Leeds.
1847. *ROGERS, WILLIAM RICHARD, M.D., 26, Upper Baker-street, N.W.
VP, C 6.
1897. ROLLESTON, HUMPHRY DAVY, M.D., 112, Harley-street, W.
Councillor.
1890. ROOT, ARTHUR GUERNSEY, M.D., 46, Eagle-street, Albany, New York,
U.S.A.
1886. ROSE, ROBERT DUNCAN, F.R.C.S., 8, St. Leonards, York.
1874. ROSE, WILLIAM, F.R.C.S., 17, Harley-street. C 2, LL, VP 2.
1883. *ROSS, DANIEL McCLURE, M.D., Cedar Lodge, Littledown-road,
Bournemouth.
1888. *ROTH, BERNARD, F.R.C.S., J.P., 38, Harley-street, W.

1893. ROUGHTON, WALTER, F.R.C.S., Cranborne House, New Barnet, Herts.
 1876. ROUTH, ALFRED CURTIS, M.R.C.S., 33, Marina, St. Leonards-on-Sea.
 1881. *ROUTH, AMAND, M.D., 14A, Manchester-square, W. c 4, s 2.
Councillor.
 1848. *ROUTH, CHARLES HENRY FELIX, M.D., 52, Montagu-square, W. p,
 vp 2, o, ll, s 4, c 6, sm. *Trustee.*
 1891. RUFFER, MARC ARMAND, M.D., Medical School, Cairo, Egypt.
 1887. RUSHWORTH, FRANK, M.D., "Langdale," Goldhurst-terrace, South
 Hampstead, N.W.
 1889. RUSSELL, JAMES SAMUEL RISIEN, M.D., 4, Queen Anne-street, W.
 1886. RUTHERFOORD, HENRY TROTTER, M.D., Salisbury House, Taunton.
1887. SAINSBURY, HARRINGTON, M.D., 63, Welbeck-street, W.
 1863. *SANSOM, ARTHUR ERNEST, M.D., 84, Harley-street, W. p, vp, s 2,
 c 5, sm, §, ll, o. *Councillor.*
 1895. SANSOM, CHARLES LANE, F.R.C.S. Edin., 5, Grosvenor-gardens,
 Grosvenor-place, S.W.
 1897. SANSOM, HARRY ARTHUR, M.D., The Glen, West End-lane, West
 Hampstead, N.W.
 1886. SAVAGE, GEORGE HENRY, M.D., 3, Henrietta-street, W. c.
 1886. SAVILL, THOMAS DIXON, M.D., 60, Upper Berkeley-street, W.
 1873. SEDGWICK, JAMES, M.D., Boroughbridge, Yorkshire.
 1868. SEDGWICK, LEONARD WILLIAM, M.D., 48, Gloucester-terrace, Hyde Park,
 W. vp 2, c 4, § 3.
 1883. SEMON, Sir FELIX, M.D., 39, Wimpole-street, W. §, c.
 1887. SERVAIS, LEOPOLD, M.D., Antwerp, Belgium.
 1889. SHAW, GEORGE, M.B., 1, The Drive, West Brighton.
 1884. SHAW, JOHN, M.D., 32, New Cavendish-street, Cavendish-square, W.
 1886. SHEILD, ARTHUR MARMADUKE, F.R.C.S., 4, Cavendish-place, W. c 2,
 s 2.
 1890. SHEPPARD, WILLIAM JOHN, M.D., 211, Upper Richmond-road,
 Putney, S.W.
 1881. SHIPTON, ARTHUR, F.R.C.S. Edin., Buxton, Derbyshire.
 1885. SHOEMAKER, JOHN V., M.D., 1031, Walnut-street, Philadelphia, U.S.A.
 1894. SHUTTLEWORTH, GEORGE EDWARD, M.D., Ancaster House, Richmond,
 Surrey.
 1890. SILK, JOHN FREDERICK WILLIAM, M.D., 29, Weymouth-street, W.
 1884. SIMPSON, JAMES HERBERT, M.D., The Crescent, Rugby, Warwickshire.
 1898. SIMPSON, JOHN POLLOCK, M.D., 1, Blandford-street, Manchester-
 square, W.
 1884. SINCLAIR, JOHN, M.R.C.P., General Post Office, St. Martin's-le-Grand,
 E.C.
 1891. SISLEY, RICHARD, M.D., 14, Park-lane, W.
 1883. *SKERRITT, EDWARD MARKHAM, M.D., Richmond Hill, Clifton.
 1886. SLATER, CHARLES, M.B., 81, St. Ermin's-mansions, Westminster,
 S.W.

1862. SLIGHT, GEORGE, M.D., 14, Old Burlington-street, W. c 2.
1889. SMALE, MORTON, M.R.C.S., 22A, Cavendish-square, W. c. *Councillor*.
1845. *SMILES, WILLIAM, M.D., St. Martha's Lodge, Guildford. vp 2, s 4, c 9, sm.
1897. SMITH, A. LIONEL H., M.R.C.S., University College Hospital, W.C.
1896. SMITH, E. STANLEY, M.D., 10, Kensington Gardens-square, W.
1887. SMITH, FREDERICK JOHN, M.D., 4, Christopher-street, Finsbury-square, E.C.
1882. SMITH, HERBERT URMSON, Oudtshoorn, Cape of Good Hope, South Africa.
1873. SMITH, HEYWOOD, M.D., 18, Harley-street, W. c 3.
1880. SMITH, NOBLE, F.R.C.S. Edin., 24, Queen Anne-street, W.
1891. SMITH, SOLOMON CHARLES, M.D., Four Oaks, Walton-on-Thames.
1877. SMITH, SYDNEY LLOYD, M.R.C.S., 25, Argyle-square, King's Cross, W.C.
1882. SMITH, THOMAS FREDERICK HUGH, F.R.C.S., Farningham, Kent.
1873. *SMITH, THOMAS GILBART, M.D., 68, Harley-street, W. vp 2, s 2, sm, c 4. *Trustee*.
1872. SMITH, WALTER, M.R.C.P. Edin., Orleans House, 60, Regent's Park-road, N.W.
1874. SMYTH, WILLIAM WOODS, L.R.C.P. Edin., Maidstone.
1894. SNAPE, ERNEST ALFRED, M.D., 41, Welbeck-street, W.
1893. SPENCER, HERBERT RITCHIE, M.D., 104, Harley-street, W.
1887. SPICER, SCANES, M.D., 28, Welbeck-street, W.
1883. SPITTA, EDMUND JOHNSON, M.R.C.S., Ivy House, Clapham Common, S.W.
1864. SQUIRE, ALEXANDER JOHN BALMANNO, M.B., 24, Weymouth-street, Portland-place.
1881. STARTIN, JAMES, M.R.C.S., 15, Harley-street, W.
1892. STAVELEY, WILLIAM H. C., F.R.C.S., 13, South Eaton-place, S.W.
1896. STEELE-PERKINS, GEORGE CHAPMAN, M.B., 85, Wimpole-street, W.
1884. STEPHENS, WILLIAM JOHN, L.S.A., 9, Old Steine, Brighton.
1892. STEWART, HASTINGS, M.R.C.S., 8, Albany-courtyard, Piccadilly, W.
1882. STEWART, JAMES, F.R.C.P. Edin., Dunmurry, Sneyd-park, near Clifton.
1894. STEWART, KENNETH TREVOR, M.D., 12, Chapel-street, Belgrave-square, S.W.
1883. STEWART, WILLIAM ROBERT HENRY, F.R.C.S. Edin., 42, Devonshire-street, Portland-place, W.
1884. STIVEN, EDWARD WINNAN FLEMING, M.D., Lincoln House, Harrow, Middlesex.
1885. STIVENS, B. H. LYNE, M.D., 107, Park-street, Grosvenor-square, W.
1848. *STOCKER, JOHN SHERWOOD, M.D., 2, Montagu-square, W. c 10, s 2.
1884. STOKER, GEORGE, M.R.C.S., J.P., 14, Hertford-street, Mayfair, W.
1892. STONHAM, CHARLES, F.R.C.S., 4, Harley-street, W.
1877. STOWERS, JAMES HERBERT, M.D., 128, Harley-street, W.

1873. STRANGE, WILLIAM HEATH, M.D., 2, Belsize-avenue, Hampstead, N.W. c 3.
1881. STURGE, WILLIAM ALLEN, M.D., Maison Malausséna, Boulevard Dubouchage 29, Nice. sm.
1889. SUMPTER, WALTER JOHN ERNELY, M.R.C.S., Sheringham, Norfolk.
1892. SUNDERLAND, SEPTIMUS, M.D., 11, Cavendish-place, W.
1876. *SUTHERLAND, HENRY, M.D., 21, New Cavendish-street, W.
1892. SUTTON, J. BLAND, F.R.C.S., 48, Queen Anne-street, W.
1896. SWANTON, JAMES HUTCHINSON, M.D., Causey Ware Hall, Lower Edmonton, N.
1892. SWIFT, WILLIAM JOHN CROPLEY, M.R.C.S., 4, Gordon-square, W.C.
1885. *SYERS, HENRY WALTER, M.D. Camb., 40, Wimpole-street, W.
1884. SYMONDS, HORATIO PERCY, F.R.C.S., 35, Beaumont-street, Oxford.
1893. SYMONDS, CHARTERS JAMES, F.R.C.S., 26, Weymouth-street, W.
1864. TAIT, EDWARD WILMSHURST, M.R.C.S., 48, Highbury-park, N.
1879. *TAIT, LAWSON, F.R.C.S., 195, Newhall-street, Birmingham.
1875. TAMPLIN, CHARLES HARRIS, M.R.C.S., 17, Paragon, Ramsgate.
1882. TAYLOR, SEYMOUR, M.D., 16, Seymour-street, Portman-square, W. c 2.
1897. TEMPLETON, GEORGE, F.R.C.S., 8, Mansfield-street, W.
1859. THOMPSON, EDMUND SYMES, M.D., 33, Cavendish-square, W. vp, o, s 3, c 3, sm.
1855. *THOMPSON, Sir HENRY, F.R.C.S., 35, Wimpole-street, W. vp., ll., c 4.
1896. THOMPSON, HENRY GEORGE, M.D., 86, Lower Addiscombe-road, Croydon, Surrey.
1895. THOMPSON, JAMES ANDREW BAIRD, M.D., White Hall, Abridge, Essex.
1873. THOMSON, JOHN ROBERTS, M.D., Monkchester, Bournemouth, Hants.
1894. THOMSON, ST. CLAIR, M.D., 28, Queen Anne-street, W.
1898. THORNE, ATWOOD, M.B., 10, Nottingham-place, W.
1897. THORNTON, BERTRAM, M.R.C.S., J.P., Berkeley Lodge, Trinity-square, Margate.
1892. THORNTON, GEORGE, M.D., Fountain Hospital, Lower Tooting, S.W.
1876. THORNTON, JOHN KNOWSLEY, M.C., J.P., 13, Portman-street, Portman-square, W. p, vp, c 3.
1867. THOROWGOOD, JOHN CHARLES, M.D., 61, Welbeck-street, W. ll, s 2, s.m, c 4, vp 4. *Councillor.*
1856. *THUDICHUM, JOHN LOUIS WILLIAM, M.D., 11, Pembroke-gardens, Kensington, W. vp, ll, o, c.
1884. THURSFIELD, THOMAS WILLIAM, M.D., J.P., Selwood, Beauchamp-square, Leamington.
1865. TRAVERS, WILLIAM, M.D., 2, Phillimore-gardens, Kensington, W.
1897. TRESILIAN, FREDERICK JAMES, M.D., Redlingtons, Enfield.
1884. *TREVES, FREDERICK, F.R.C.S., 6, Wimpole-street, W. c 3, ll, vp 2.
1898. TUCKER, E. F. GORDON, M.R.C.S., Indian Medical Service, care of Messrs. H. King and Co., 45, Pall Mall, S.W.
1882. TUKE, CHARLES MOLESWORTH, M.R.C.S., Chiswick House, Chiswick.

1886. TUKE, THOMAS SEYMOUR, M.B. Oxon., Chiswick House, Chiswick.
1884. TURNER, GEORGE R., F.R.C.S., 49, Green-street, Grosvenor-square, W. s 2, c 3. *Vice-President.*
1890. TWEED, EDWARD REGINALD, M.D., Hembury Fort, Honiton, Devon.
1883. TWEEDY, JOHN, F.R.C.S., 100, Harley-street, W. c.
1891. TYSON, WILLIAM JOSEPH, M.D., 10, Langhorne-gardens, Folkestone.
1887. *UNDERWOOD, EDWARD T., M.D., Fort Bombay, India.
1897. VASSIE, ALEXANDER HENRY, M.B., 98, Priory-road, West Hampstead, N.W.
1883. VENNING, EDGCOMBE, F.R.C.S., 30, Cadogan-place, S.W.
1874. VERLEY, REGINALD LOUIS, F.R.C.P. Edin., St. George's Club, Hanover-square, W.
1893. VOELCKER, ARTHUR FRANCIS, M.D., 31, Harley-street, W.
1892. WAGGETT, ERNEST BLECHYNDEN, M.B., 45, Upper Brook-street.
1850. *WAGGETT, JOHN, M.D., Perivale, Bournemouth; and Union Club, S.W.
1884. WAKLEY, THOMAS, jun., L.R.C.P. Lond., 5, Queen's-gate, S.W.
1850. *WAKLEY, THOMAS HENRY, F.R.C.S., 5, Queen's-gate, S.W.
1894. WALLIS, FREDERICK CHARLES, F.R.C.S., 26, Welbeck-street, W. *Councillor.*
1880. WALSHAM, WILLIAM JOHNSON, F.R.C.S., 77, Harley-street, W. c.
1895. WALTERS, FREDERICK R., M.D., 60, Welbeck-street, W.
1894. WARING, HOLBURN JACOB, F.R.C.S., 9, Upper Wimpole-street, W.
1894. WATERHOUSE, HERBERT FURNIVALL, F.R.C.S., 81, Wimpole-street, W.
1883. WATERHOUSE, WILLIAM DAKIN, LL.D., 50, West End-lane, West Hampstead, N.W. c.
1891. WATSON, W. SPENCER, F.R.C.S., 60, Queen Anne-street, Cavendish-square, W.
1889. WAUGH, HENRY DUNN, M.D., 6, Sumner-place, Onslow-square, S.W.
1884. WEBB, F. ERNEST, M.R.C.S., 113, Maida-vale, W.
1896. WEBER, FREDERICK PARKES, M.D., 19, Harley-street, W.
1889. WEBER, HERMANN, M.D., 10, Grosvenor-street, W.
1898. WEEKS, COURTENAY CHARLES, M.R.C.S., Pinchbeck, Spalding, Lincs.
1838. *WELLS, JOHN ROBINSON, F.R.C.S., 4, Pierrepont-road, Acton, W. c 2.
1884. WEST, SAMUEL, M.D., 15, Wimpole-street, W. s 2, c 4, CFC. *Lettsmanian Lecturer.*
1839. WETHERED, FRANK JOSEPH, M.D., 83, Harley-street, W.
1892. WHEATON, SAMUEL WALTON, M.D., 76, The Chase, Clapham Common, S.W.
1882. WHIPHAM, THOMAS T., M.D., 11, Grosvenor-street, W. SM, c.
1884. WHISTLER, WILLIAM MACNEILL, M.D., 18, Wimpole-street, W.

1889. WHITE, E. F., F.R.C.S., Westlands, 280, Upper Richmond-road, Putney, S.W.
1868. WHITE, JOSEPH, F.R.C.S. Edin., D.C.L. Durh., 6, Southwell Gardens, Queen's Gate, S.W. c 3.
1880. *WHITE, WILLIAM HENRY, M.D., 43, Weymouth-street, W. c 3.
1885. WHITE-COOPER, GEORGE OWEN, M.B., 5, Courtfield-road, S.W.
1883. WHITEHEAD, WALTER, F.R.C.S. Edin., F.R.S.E., 499, Oxford-road, Manchester. c.
1885. WHITLA, WILLIAM, M.D., 8, College-square North, Belfast, Ireland.
1877. WHITMORE, WILLIAM TICKLE, F.R.C.S. Edin., 7, Arlington-street, Piccadilly, W.
1898. WILLEY, F. INGOR, M.B., The Wych, 8, Avenue-road, Highgate, N.
1872. WILLIAMS, CHARLES THEODORE, M.D., 2, Upper Brook-street, Grosvenor-square, W. p, vp 2, ll, s 2, sm, o, l 3, c 9.
1876. WILLIAMS, HENRY WILLIAM, M.D., Hillside, Guilsborough, Northampton.
1883. WILLIAMS, Sir JOHN, Bart., M.D., 63, Brook-street. c 3.
1881. WILLS, CALEB SHERA, C.B., Colonel, R.A.M.C., Lunecliffe, Lancaster.
1873. WILLS, THOMAS MUNNS, F.R.C.S.I., J.P., 44, Merton-road, Bootle, Liverpool.
1893. WILLS, WILLIAM ALFRED, M.D., 29, Lower Seymour-street, W.
1892. WILSON, CLAUDE, M.D., Belmont, Tunbridge Wells.
1884. WINSLOW, H. FORBES, M.D., 14, York-place, Portman-square, W.
1873. WINSLOW, LYTTLETON STEWART FORBES, M.B., D.C.L., 33, Devonshire-street, W. c.
1876. WOAKES, EDWARD, M.D., 78, Harley-street, W.
1886. WOOD, T. OUTTERSON, M.D., 40, Margaret-street, Cavendish-square, W. c 3.
1873. WOODHOUSE, ROBERT HALL, M.R.C.S., 1, Hanover-square, W.
1891. WOOLLETT, CHARLES JEROME, F.R.C.S., "Ambleside," Streatham, S.W.
1898. WRIGHT, SYDNEY FAULCONER, M.D., St. Peter's Lodge, Eltham-road, Lee, S.E.
1884. WYMAN, WILLIAM SANDERSON, M.D., Red Brae, Putney-hill, S.W. c 2.
1891. YARR, MICHAEL THOMAS, Major, R.A.M.C., 91, Victoria-street, S.W.
1884. YEO, I. BURNEY, M.D., 44, Hertford-street, Mayfair, W.
1897. YOUNG, ADAM, M.R.C.S., 2, College-crescent, South Hampstead, N.W.
1897. YOUNG, WILLIAMS H. FROME, M.R.C.S., Malcolm Corner, Worple-road, Wimbledon.
1884. YOUNGER, EDWARD GEORGE, M.D., 19, Mecklenburgh-square, W.C. Councillor.

NON-SUBSCRIBING FELLOWS.

- 1868. BATEMAN, Sir FREDERIC, M.D., J.P., Upper-street, Giles-street, Norwich.
- 1872. BELL, JOHN HOUGHAM, M.D., Ventnor, Isle of Wight.
- 1868. BUCKLE, FLEETWOOD, M.D., Staff Surgeon R.N., Merton Lodge, South-sea.
- 1870. CLOUSTON, THOMAS SMITH, M.D., Royal Asylum, Morningside, Edinburgh. FM 1870.
- 1868. FOLKER, WILLIAM HENRY, F.R.C.S., Hanley, Staffordshire.
- 1869. FOSTER, Sir WALTER B., M.D., M.P., 14, Temple-row, Birmingham.
- 1868. FOX, CHARLES HENRY, M.D., 35, Heriot-row, Edinburgh.
- 1868. GAINE, CHARLES, 30, Gay-street, Bath.
- 1871. GLYNN, THOMAS ROBINSON, M.D., 62, Rodney-street, Liverpool.
- 1868. KNAGGS, SAMUEL, 2, Bradley-lane, Huddersfield.
- 1869. LEES, CHARLES ALEXANDER, M.D., Dep. Inspector-General, R.N.
- 1869. MATHEWS, ROBERT, Bickley, Kent.
- 1871. MAURICE, OLIVER CALLEY, 75, London-street, Reading.
- 1868. MCINTYRE, JOHN, M.D., LL.D., Odiham, Hants.
- 1868. NEVINS, JOHN BIRKBECK, M.D., 3, Abercromby-square, Liverpool.
- 1871. OGLE, WILLIAM, M.D., The Elms, Derby.
- 1869. PHILIPSON, GEORGE HARE, D.C.L., M.D., J.P., 7, Eldon-square, Newcastle-on-Tyne.
- 1869. PRICE, WILLIAM PRESTON, M.D., 1, Ethelbert-crescent, Margate.
- 1869. PRIOR, CHARLES EDWARD, M.D., 4, Goldington-road, Bedford.
- 1869. ROBERTS, BRANSBY, M.D., Ash Grove, Eastbourne.
- 1869. STEAR, HENRY, Saffron Walden, Essex.
- 1869. TAYLOR, CHARLES BELL, M.D., 9, Park-row, Nottingham.
- 1869. WALKER, JOHN SWIFT, M.D., Hanley, Staffs.
- 1868. WIBLIN, JOHN, F.R.C.S., Wimborne, Dorset.

*** As it is very desirable that the foregoing Lists should be kept as accurately as possible, Fellows are requested to send notice of any corrections that may be necessary to the Secretaries or to the Registrar.

GENERAL MEETING.

May 9th, 1898.

A. ERNEST SANSOM, M.D., F.R.C.P., *President*, in the Chair.

Report of the Council for the Session 1897-98, presented at the General Meeting of the Society, held May 9th, 1898.

THE Council is pleased to have to report the continued prosperity of the Society.

The number of Fellows is now 746, an apparent considerable decrease on that of the preceding year. But during the year the revision of the list of Corresponding Fellows has been completed by the Honorary Secretary for Foreign Correspondence, Mr. Alban Doran, with the result that many of these Fellows were found to be deceased and their names were this year removed from the list. The actual number of Ordinary Fellows has increased by four, the unusually large number of 30 having been elected during the year. There have been 10 resignations, and seven Fellows have been struck off the roll for non-payment of subscriptions.

The Council announces with regret that the Society has lost by death nine of its Ordinary Fellows:—Sir Richard Quain, Bart., a former Vice-President and a benefactor of the Society; Mr. Edward Lund, Emeritus Professor of Surgery in the Victoria University, and a former Orator of the Society; Drs. Leonard Remfry, Dale, and Robertson; and Messrs. Craigie, Carmalt Jones, John Holm, and W. G. Marshall. The death of Professor Tarnier has also deprived the Society of one of its most distinguished Honorary Fellows.

The Annual Oration, delivered by Mr. Edmund Owen, gave an interesting and valuable account of the history of the Society in the eighteenth century.

Mr. Morgan delivered an important series of Lettsomian Lectures on "The Affections of the Urinary Apparatus in Children."

During the year Dr. Robert Barnes presented the Society with £100. The Council is expending this welcome donation in the binding of one case full of the old books, the provision of a safe to hold the documents of the Society and the most valuable of the old books, and in the purchase of a desk for the use of the Registrar. The name of the donor will be suitably inscribed on each of his gifts.

The papers read during the year have fully maintained the high standard customary in the Society, and, as shown by the discussions upon them, have been greatly appreciated by the Fellows.

(Signed) A. ERNEST SANSOM,
President.

Report of the House and Finance Committee for the Session 1897-98.

The Committee has to report that the Society's premises are in a good state of repair, that the income from regular tenants has been increased by £57 15s. per annum, and from occasional lettings by £26 5s.

Since the date of the last Report two Debenture Bonds have been drawn and paid off.

(Signed) D. H. GOODSALL,
Chairman.

Honorary Librarian's Report.

I have to report that during the past year the condition of the Library has been increasingly satisfactory.

One hundred and twenty-nine volumes have been presented and five volumes purchased. Of the donors special mention should be made of the Rev. Mr. Hull, who gave to the Society 51 volumes from the library of his father, the late Robert Hull, of Norwich, Dr. J. Lowe, Dr. C. J. Hare, Mr. Brice Bunny, Mr. Alban Doran, and Messrs. Cassell and Co. The small number of purchased works has been due to the limited funds at the disposal of the Library Committee, and also to the circumstance that since January last the Society has subscribed to Lewis's Library, from which 20 volumes are periodically received for circulation to Fellows of the Society. This arrangement has proved to be very acceptable to Fellows, as shown by the considerable increase in the number of books issued to borrowers, the number of the latter having almost doubled within the past three years. A further advantage which follows from this new departure is the opportunity it offers of more satisfactorily ascertaining those works which are desirable to purchase for our shelves, and relieves us from the necessity of permanently acquiring the recurring editions of mere text books which are so frequently asked for by the Fellows.

A slight advance has been made in the cataloguing and arranging of the earlier works, and a small number of these books have been rebound. The Council has determined to devote a moiety of the donation made to the Society by Dr. Robert Barnes to this purpose, and I hope to be able to report next year a considerable addition to this important work. The Library Committee has met for the purchase of books and the transaction of other Library business.

Again I have much pleasure in reminding the Society of its indebtedness to Mr. Hall for the efficient and obliging manner in which he administers this as other departments of the Society's work, and I would desire to record my own personal obligation to him for ever-ready and obliging assistance.

(Signed) W. H. ALLCHIN,
Hon. Librarian.

Amongst the books added to the Library during the past year are the following :—

- ALDERSMITH (H.). 'Ringworm and Alopecia Areata.'
 ALLBUTT (C.). 'System of Medicine.' Vols. i-v.
 BARNES (Robert). 'Obstetric Medicine and Surgery.' 2 vols.
 BLANDFORD (G. F.). 'Insanity.'
 BEEVOR (C. E.). 'Diseases of the Nervous System.'
 BROADBENT (Sir W. H.). 'Heart Disease.'
 FOWLER (J. K.) and GODLEE (R. J.). 'Diseases of the Lungs.'
 HAIG (A.). 'Uric Acid in the Causation of Disease.' 4th edition.
 HERMAN (E.). 'Diseases of Women.'
 HUTCHISON (R.) and RAINY (H.). 'Clinical Methods.'
 MACNAUGHTON-JONES (H.). 'Diseases of Women.' 7th edition.
 MORRIS (M.). 'Ringworm.'
 OWEN (Edmund). 'Surgical Diseases of Children.' 3rd edition.
 ROUTH (C. H. F.). 'Overwork.' 4th edition.
 THORNTON (J. Howard). 'Memories of Seven Campaigns.'
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MEDICAL SOCIETY

Dr.

BALANCE SHEET, FROM 1ST OCTOBER,

| RECEIPTS. | | | | | | | £ | s. | d. |
|------------------------------------|----|----|----|----|----|----|-------|----|----|
| Balance from Last Account | .. | .. | .. | .. | .. | .. | 30 | 4 | 5 |
| <i>Ordinary—</i> | | | | | | | £ | s. | d. |
| Subscriptions | .. | .. | .. | .. | .. | .. | 500 | 17 | 0 |
| Entrance Fees | .. | .. | .. | .. | .. | .. | 27 | 16 | 6 |
| Life Composition Fee | .. | .. | .. | .. | .. | .. | 5 | 5 | 0 |
| Rents { Bolt Court (less expenses) | | | | | | | £69 | 17 | 6 |
| Chandos Street | .. | .. | | | | | 697 | 4 | 0 |
| | | | | | | | 767 | 1 | 6 |
| Contributions for use of Rooms | .. | .. | .. | .. | .. | .. | 67 | 15 | 6 |
| Sale of 'Transactions' | .. | .. | .. | .. | .. | .. | 2 | 5 | 0 |
| „ Old Stores | .. | .. | .. | .. | .. | .. | 1 | 10 | 0 |
| „ Duplicates from Library | .. | .. | .. | .. | .. | .. | 3 | 3 | 0 |
| | | | | | | | 1,375 | 13 | 6 |
| <i>Extraordinary—</i> | | | | | | | | | |
| Donation from Dr. Robert Barnes | .. | .. | .. | .. | .. | .. | 100 | 0 | 0 |

£1,505 17 11

FOTHERGILLIAN

| | £ | s. | d. |
|---|-----|----|----|
| Balance from Last Account | 46 | 14 | 5 |
| Dividend on £916 10s. 5d., 2½ % Consols | 25 | 4 | 0 |
| | £71 | 18 | 5 |

Examined, compared with vouchers, and found correct,

OF LONDON.

1897, TO 30TH SEPTEMBER, 1898.

CR.

EXPENDITURE.

| <i>Ordinary—</i> | | | | | £ | s. | d. | £ | s. | d. |
|---|----|----|------|----|-----|----|----|--------|----|----|
| Rent, 11 and 12, Chandos Street | .. | .. | .. | .. | 290 | 0 | 0 | | | |
| Rates, Taxes, and Insurance | .. | .. | .. | .. | 152 | 12 | 9 | | | |
| Registrar's Salary and Allowances | .. | .. | .. | .. | 117 | 13 | 0 | | | |
| Collector's Poundage on Subscriptions | .. | .. | .. | .. | 25 | 0 | 10 | | | |
| Reporter's Salary | .. | .. | .. | .. | 20 | 9 | 6 | | | |
| Stationery and Printing | .. | .. | .. | .. | 18 | 14 | 3 | | | |
| Printing and issuing 'Transactions,' Vol. xx .. | .. | .. | .. | .. | 137 | 11 | 7 | | | |
| Library Expenses | .. | .. | .. | .. | 32 | 16 | 8 | | | |
| Postage and Stamps | .. | .. | .. | .. | 11 | 15 | 1 | | | |
| Coals and Wood | .. | .. | .. | .. | 8 | 15 | 3 | | | |
| Gas and Electric Supply | .. | .. | .. | .. | 45 | 12 | 5 | | | |
| Repairs | .. | .. | .. | .. | 49 | 10 | 9 | | | |
| Interest on Debentures | .. | .. | .. | .. | 127 | 5 | 8 | | | |
| Conversazione | .. | .. | .. | .. | 45 | 0 | 0 | | | |
| Refreshments at Meetings | .. | .. | .. | .. | 12 | 12 | 6 | | | |
| Bankers' Charges | .. | .. | .. | .. | 0 | 0 | 9 | | | |
| Wages | .. | .. | .. | .. | 46 | 13 | 6 | | | |
| Chandlery and Cleaning | .. | .. | .. | .. | 14 | 4 | 5 | | | |
| Anniversary Dinner, 1898 | .. | .. | £120 | 15 | 0 | | | | | |
| Less Fellows' Tickets | .. | .. | 95 | 5 | 0 | | | | | |
| | | | | | | | | | | |
| | | | | | 25 | 10 | 0 | | | |
| Anniversary Dinners, 1896 and 1897, refund to Hon. Secs. | .. | .. | .. | .. | 9 | 15 | 7 | | | |
| | | | | | | | | 1,191 | 14 | 6 |
| <i>Extraordinary—</i> | | | | | | | | | | |
| Redemption of Two Debentures | .. | .. | .. | .. | 200 | 0 | 0 | | | |
| Fire Proof Safe | .. | .. | .. | .. | 35 | 16 | 11 | | | |
| | | | | | | | | 235 | 16 | 11 |
| Balance at Bank, 30th September, 1898 | .. | .. | .. | .. | .. | .. | .. | 78 | 6 | 6 |
| | | | | | | | | | | |
| | | | | | | | | £1,505 | 17 | 11 |

FUND.

| | | | | | £ | s. | d. |
|---|----|----|----|----|-----|----|----|
| By Books Purchased for Library | .. | .. | .. | .. | 8 | 2 | 6 |
| Balance at Bank, 30th September, 1898 | .. | .. | .. | .. | 63 | 15 | 11 |
| | | | | | | | |
| | | | | | £71 | 18 | 5 |

October 1st, 1898. (Signed) D. H. GOODSALL, *Treasurer.*

October 4th, 1898. (Signed) F. SWINFORD EDWARDS, } *Auditors.*
J. PEEKE RICHARDS, }

TRANSACTIONS
OF THE
MEDICAL SOCIETY OF LONDON.
125TH SESSION.

October 11th, 1897.

ADDRESS ON THE INVESTIGATION OF SOME OF THE
NERVOUS DISORDERS OF THE HEART.

By the President, ARTHUR ERNEST SANSOM, M.D., F.R.C.P.

GENTLEMEN,—There are some variations from the normal functioning of the heart which are attended by feelings of acute pleasure. This fact has been recognised from time immemorial, and has been incorporated into the language of every-day life. So we have the words in the vernacular—*hearty*, *heartfelt*, and *heartiness*, and, derived from the Latin sources, *cordial* and *cordiality*. It is probably correct to say that the state indicated by these terms is not normal, and is inconsistent with perfect health, for health—the old Saxon “*wholth*”—implies such harmonious play of all the bodily organs that the heart and all the mechanism of circulation work imperceptibly. May I be permitted to present myself, therefore, to you as a living morbid specimen, for I have risen with a heart that goes out towards you, and I beg to express my cordial thanks for the honour you have conferred upon me by electing me—*primus inter pares*—your President. Forgive me if my thoughts go back for a few moments to the long past, and if the first flash of a quickened circulation is calmed by memories which have some sadness in them—for there is a pleasure in retrospect and some sweetness in sorrow.

I was elected a Fellow of this Society in 1863, when the late Edwin Canton was President, and I was Hon. Secretary in 1868,

when my valued friend, Dr. Richardson, afterward Sir Benjamin, was in the chair. Our meetings were then held in a small room in George Street, Hanover Square. Richardson and myself had many interests in common—especially in regard to the subjects of anæsthetics and of the nature of infectious diseases. We had many debates on the last mentioned question. I have never even to this day been able to clearly understand what the conception of Richardson of a contagium really was—but he was dead against germs. I believe that I was the first member of the medical profession in England—and that before this Society—to bring forward in summary the various researches of Pasteur. I remember enunciating the doctrine, at that period considered most wild and heterodox, that our conception of an infecting agent must be that of a minute central portion constituted by a solid particulate protoplasm endowed with life and powers of multiplication, surrounded by a zone of soluble material excreted by itself, capable of giving rise to the phenomena of the special infectious disease.* I was, I think, in a minority of one, but it might be two, for a late President, William Adams, was inclined to share my views. I am amazed myself when I think of the immense strides taken since this period—the development of bacteriology into a great branch of natural science and the subsection dealing with pathogenetic microbes now claiming the undivided attention of able investigators, and forming a most important part of the educational system.

Of the 34 Presidents who occupied the chair during my time, 18 have passed away. In the case of some of these their works alone remain; their names are forgotten, and yet their labours did much to contribute to the sum total of human knowledge. Others, such as Andrew Clark, Habershon, Buchanan, Erasmus Wilson, Durham, and Bristowe, being dead, yet speak. Their own individual voices are heard by the travellers over the sea of life to warn and to encourage, to stimulate and to guide. Of past Presidents we have still with us Bryant, Routh, Gant, Sir William Broadbent, Sir Joseph Fayrer, Ord, Brudenell Carter, Hughlings Jackson, Sir William MacCormac, Theodore Williams, Knowsley Thornton, Sir Douglas Powell, Jonathan Hutchinson, Sir William

* Cf. the report of the meeting of November 7th, 1870, in 'British Medical Journal,' November 19th, 1870, p. 567. The words quoted were spoken in debate and unreported.

Dalby, Sir James Crichton Browne, Reginald Harrison—all I am proud to reckon among the number of my personal friends, and all I know to be still, as ever they were, sincere well-wishers of this Society, and ready to give it the benefit of their counsel.

Permit me now to offer a few words of personal explanation, for I think that my relation with every member of this Society should be one of absolute candour. The probability of occupying this chair, which I do with so much warmth of feeling to-day, came very closely to me some years ago. I felt it my duty then to discourage any such project. It is very likely that my ideas were misunderstood. I had laid it down as a line of action, and I had also so expressed it to others, that I could not properly fulfil the duties of this chair so long as I continued, as assistant physician of the London Hospital, to do the work of the out-patient department every Monday—a work which was never finished until a late hour. Believe me when I say that when some valued friends suggested to me the possibility at that time that I might be nominated as your President, and I emphatically discouraged the idea, it was with a bitter heart-pang I spoke—for I had no greater ambition than to be President of this Society. It is now seven years that I have been relieved from the hospital out-patient duties, and have those of the wards only, and I need say no more than that it will be my earnest desire to follow as closely as I can the example of those who have occupied this chair before me.

I approach now the consideration of the theme which I have chosen for my opening address. The evidence I have already given tends to the conclusion which is a truism to many—that variations of the functioning of the heart associated with subjective feelings of pleasure or of pain are consistent with a structural integrity of the organ so far as can be determined by physical means of investigation.

I have on former occasions made certain communications to this Society on disturbances of the heart rhythm in the sense of tachycardia and of arhythmia. I have considered the rapid heart and the irregular heart. In like manner I have arranged my data concerning the slow heart—bradycardia—and I had intended to bring forward this subject to-night. I thought, however, that some practical hints deduced from a survey of the whole subject of the nervous disorders of the heart might be better adapted to

an opening address. My plan of investigation has been uniform. I have first made a record and an analysis of the evidence in each group—the rapid heart, the irregular heart, and the slow heart—of cases which have been under my own personal observation. I have then compared these and the deductions from them with the cases and the deductions of other observers, as far as I have been able to procure these. In my former communications I have been very chary of expressing conclusions or of formulating doctrines, but on this occasion, with the hardihood of one whose paper is not to be the subject of debate, I shall adopt the dogmatic rather than the argumentative method.

From the clinical evidence which I have examined I have come to the conclusion that perturbations of the heart's rhythm, whether on the score of tachycardia, or of arrhythmia, or of bradycardia, are essentially independent of any structural disease of the heart and of its valves, and are entirely due to causes involving the nervous mechanism of the cardiac reflex. In a great majority of cases presenting these signs careful physical examination during life reveals no trustworthy evidence of structural disease, and in some of the few in which death has occurred and has been followed by autopsy no organic changes in the heart have been noted. I conclude that when structural disease of the heart has been observed in the subjects of perturbed rhythm either the latter has been a coincidence—a superadded phenomenon—or the organic cardiac changes have been secondary to the disorder of the nerve-mechanism. For instance, I have seen well marked Graves's disease supervene upon chronic valvular disease the result of antecedent rheumatic endocarditis, and I have observed dilatation of the heart with mitral incompetence occur in the course of Graves's disease when there has been no reason to suspect any intercurrent malady. In the latter case I have found that the signs of structural disease of the heart have borne no proportion to the degree of cardiac tumult. The subject of a very rapid heart, 120 to 160, such rate being manifested for many months, may never show signs of cardiac dilatation nor of structural change, whilst one in whom there is only a moderate tachycardia (100 and under) may manifest the advent of undoubted dilatation of the left ventricle with valvular incompetence.

On this occasion I exclude all consideration of angina pectoris,

and all painful affections affecting the heart, but I cannot exclude from the consideration of disturbed rhythm of the heart a form of distress which is not pain—an indefinable sense that all is not right with the heart, that the subject of it is in peril though he or she receive the most emphatic and well-founded assurance that the physical state of the organ is satisfactory. This subjective condition is in no defined correlation with observed rhythmic disturbances. It is sometimes near the borderland of mental disease. But I am convinced that it has a cause in a morbid condition of the nervous mechanism in the medulla.

If we accept it as a working hypothesis that serious disturbances of the action of the heart and serious symptoms interfering with the sense of its well-being may occur without morbid changes detectable by physical examination of the heart itself there is a very important corollary, viz., that it is necessary in every case that, in addition to the employment of the ordinary methods of physical diagnosis for the discovery of organic changes within the heart, there should be a careful investigation of the nervous system more especially in its relation with the cardiac reflex.

On this point I propose to suggest a scheme of examination, and to offer a few hints. It will, of course, be understood that what I propound must of necessity be brief and incomplete.

In the first place I would urge the importance of keeping the patient who is to be examined as tranquil as possible. In the case of a patient who is in bed I have nothing to say—the examination will, of course, be conducted in such way as to cause as little disturbance as possible. In the case of one who comes for consultation in ordinary out-of-door apparel I suggest that he should sit down and not attempt to disrobe. It is easy enough to excite a patient, but it is not so easy to keep him or her quiet. I have known the rate of the heart-beats to be increased in an extraordinary degree by a mere change from the sitting or recumbent to the standing position. One who rushes in and peels off his clothes in a state of excitement may not only cause for himself an abnormally rapid pulse, but may, I think, manufacture a murmur near the heart's apex, which may lead to erroneous inferences. I dare suggest that in some instances it is probable—in the cases of candidates for life insurance for example—that a life has been embittered because the physical

examination has been conducted in a subject in a state of abnormal excitement and a systolic murmur at or near the apex has been wrongly interpreted as the index of an organic disease. I suggest, therefore, that the examination should be commenced when the patient is in the sitting position, the ordinary clothing not being removed.

I.—Amongst the most important are the *signs obtained by inspection of the eyes and eyelids*. Any protuberance of the eyeball will, of course, be noticed and its relation with the condition of the thyroid and the rate of heart's pulsations recorded. Any retraction of the upper eyelids towards the margin of the orbit must be noted, for this is a sign of considerable importance. It often exaggerates the prominence of a bulging globe, and sometimes I have seen that it produces the semblance of an exophthalmos when there is really no undue prominence of the eyeball. This has usually been called Stellwag's sign. I have so termed it myself following a multitude to do evil. I am convinced that it ought to be called Dalrymple's sign as suggested in Dr. Swanzy's excellent note on Exophthalmic Goitre ('A Handbook of the Diseases of the Eye and their Treatment,' by H. R. Swanzy, A.M., M.B., F.R.C.S.I., 5th ed., London, H. K. Lewis, 1895). The observations of Dalrymple were recorded by White Cooper 20 years before Stellwag's further observation of the sign. The note by White Cooper is sufficiently satisfactory and explicit:—"Several examples of this peculiar affection have been seen by my friend, Mr. Dalrymple, who has suggested the following explanation of the phenomena. The prominence of the eyes is probably due to the operation of two causes. An absence of the proper tonicity of the muscles by which the eyes are retained in their natural positions in the orbit and some amount of venous congestion of the tissues forming the cushion behind the globes. That some of the muscles may be in a relaxed and others in a morbidly excited condition was well shown in one of the cases under the care of that gentleman where the eyes being greatly protruded were nearly denuded of the protection of the upper lid by a constant and powerful spasm of the levator palpebræ superioris which drew the lid so far upwards and backwards that much of the sclerotic above the cornea was visible" ("On Protrusion of the Eyes in Connection with Anæmia, Palpitation, and Goitre,"

by W. White Cooper, F.R.C.S., 'Lancet,' May 26th, 1849, p. 553). The lower eyelids are in some cases seen to be also in slight degree affected so that when the patient's gaze is directed downwards they present a slight concavity or cup (Hill Griffith and Mann).

I have observed another sign in regard to the upper eyelids in many cases of tachycardia. When the patient has been told to close the eyelids gently the upper lid has manifested a very marked and unusual tremor. I have found this sign in the early stages, and also in the recovery stages of Graves's disease.

The best method of examining for Von Graefe's sign is, I think, to cause the patient to follow with his gaze the downward movement of a penholder or narrow paperknife held horizontally. The immobility or sluggish descent of the upper lid when the globe is turned downwards, and hence the appearance of a crescent of sclerotic above the iris, is easily recognised. Von Graefe's sign and Dalrymple's eyelid retraction often co-exist, but in some cases the one is observed and not the other.

I have noticed (as recorded by Dr. Dixon Mann) that in some cases the normal balance of the muscles of the globe is somewhat perverted so that one eye appears to be on a lower level than the other ('Trans. Ophth. Society,' 1886).

I have also noted in some instances a decided inequality of the pupils—of course unexplained by organic causes—which became restored to the normal when the other disorders of function ceased.

When these signs exist, especially in combination, I think they have an important significance. In the great majority of cases they are associated with heart disturbance or heart distress. The most frequent form of disorder is tachycardia—the rapid heart—persistent or paroxysmal. This has long been recognised; the association of the eye and eyelid phenomena with Graves's disease, of which tachycardia is so marked a feature, is fully acknowledged. Less frequently the association is with extreme irregularity of the heart's action. And such irregularity rather than rapidity I have found in some cases of typical Graves's disease. I have observed well-marked Von Graefe's sign in a man, aged 49, whose pulse was only 68 but showed very marked irregularity, and in whom there was much subjective heart distress. In some of the cases in which I have observed the signs noted there were also

great variations of rate in the heart-beat—a state which perhaps may be termed irritable heart. For instance, in a man of 48, manifesting slight exophthalmos and inequality of pupils, the heart rate was 76 in the sitting position, 84 in the standing, and then a sudden rise, without any evidence of discomfort, to 114.

In other cases, though there have been no perversions of rate and rhythm of the heart to be noted, the patients who have shown well marked eye and eyelid signs have manifested signs of distress referred to the heart. It is no doubt correct that well marked eyelid phenomena may occur in those who show no cardiac signs nor symptoms. Sharkey found Von Graefe's sign in 12 out of 613 cases of all diseases in his out-patient room. Dalrymple's sign has been recorded as frequently seen in neurotic and hysterical subjects. I have seen well marked Von Graefe's sign in a young man addicted to alcohol and in an old woman with emphysema, both of whom manifested no notable heart symptoms. Nevertheless I cannot doubt that the signs I have mentioned are of considerable practical significance, for they indicate very strongly the probability that the patient who manifests them will present signs of disorder or distress at heart.

As to the proximate cause of the upper eyelid phenomena I am in accord with the views of Mr. Arthur Maude, the value of whose contributions to the literature of Graves's disease in its various phases I desire to acknowledge. I cannot think that the marked, long-continued, and forcible retraction of the lid can be due to spasm of the insignificant group of muscular fibres, varying so much in different individuals, known as Müller's muscle. On the other hand, there is strong evidence that there is a paretic condition of the orbicularis as well as of the upper facial muscles. The levator palpebræ released from its antagonist evidences a tonic contraction. "The group of muscles which are habitually paretic in Graves's disease are the superior facial group, the orbicularis, frontalis, and corrugator supercilii. This group is supplied by fibres which in all probability are derived from the oculo-motor nuclei passing down to the seventh trunk by way of the posterior longitudinal bundles. We are irresistibly led, therefore, to believe that the changes producing the lid symptoms are changes in the oculo-motor nuclei" ("The Eyelid Symptoms in Exophthalmic Goitre," by Arthur Maude, L.R.C.P., 'Edin. Med. Jour.,' August 1897, p. 142).

The evidence tending to the conclusion that the associated disorders of the heart denote an implication of the roots of the vagi nerves I can only allude to, for time does not permit of its elaboration (*see* the contributions of Filehne, Sattler, Fitzgerald, and Hale White).

II.—I pass now to another step in the examination, which has a considerable value in a minority of cases. I do not presume to dictate the technique, but the *auditory mechanism and the naso-pharyngeal tract* should be explored, for from data which I have already published ('Medical Society's Transactions,' vol. xvi, p. 107) I have convinced myself that irregularity of the heart is sometimes the result of a reflex occasioned by a morbid irritation of some part of the naso-pharyngeal tract or of the auditory mechanism.*

III.—I come now to the examination of the radial pulse, the patient remaining as tranquil as possible. I suggest that the rate of pulsation in successive quarters of a minute should be noted, and irregularities, rhythmic or arrhythmic, so far as this mode of observation renders it possible, determined.

On the vexed question of tension I do not enter otherwise than to say that usually in cases of long persisting rapid heart, unaccompanied by pyrexia, the arterial tension is *plus*; though at intervals, and exceptionally, there may be low tension and diastolic. The points which I insist on are that the pulse rate and characters, as determined by the ordinary method of feeling the pulse, should be supplemented and controlled by a determination of the rate and characters of the heart's pulsations as learned by auscultation.

IV.—I now suggest the adoption of auscultation, the patient being yet quiet and the clothing not removed.

Much valuable evidence is thus obtained. The heart beats are easily counted, and that under similar conditions with the observation of the radial pulse. The pulse rate and heart rate are compared. When there is extreme tachycardia, the rate being over 150, the counting of the radial pulse, as felt by the finger, is difficult, and when the rate is 200 and more it is impossible. Heart pulsations of 260 or 300 per minute are, however, readily counted by auscul-

* The conditions of the thyroid gland must, of course, be explored, but I cannot now enter upon the question of their causal relation with the phenomena.

tation. In this manner also irregularities of rhythm are detected or made more evident. The heart rate may be found to be double the pulse rate; alternate waves failing to be detected in the radial artery, or another form of irregularity, cyclical or desultory, may be found. Much more, however, may be determined by this preliminary mode of auscultation. If no adventitious sounds are as yet audible the relative pronunciation of the normal sounds is often better appreciated than when the stethoscope is applied to the chest wall itself. A loud second sound may assert itself—the evidence of over tension in the aortic or in the pulmonary artery circuit may become pronounced. Let me emphasise the point that the observation of the relative pronunciation of the normal sounds of the heart is as important as the observation of murmurs or morbid sounds. If there be a due relation between the first and second sounds, and if the second sounds, *inter se*, in their respective areas of audibility preserve their normal balance, any systolic murmur which may be found on further examination is probably of very slight morbid significance.

V.—An investigation concerning the manifestation of muscular tremor is important, for tremors of the muscles exist in a very large proportion of the cases of Graves's disease and allied disorders. The examination may be thus simply conducted:—The patient being in the sitting position, the observer, standing at the back of the patient, places a hand over each shoulder. The fine tremors of the trunk muscles are thus readily appreciated. Then, taking each hand of the patient, he extends the arms from the body, keeping them horizontally; thus the trembling movements of the muscles of the arms are communicated to his own hands. Then, the patient still sitting, the feet are gently supported by the hands of the observer, and the tremors of the lower-limb muscles are thus felt. So far as the trunk and upper extremities are concerned, the process should be repeated when the patient assumes the erect position. Mr. Arthur Maude has confirmed my observation that tremor is sometimes seen in the muscles of the face; he has found it to affect the masseters. Unilateral spasms of the facial muscles have been noted by Eulenburg and Hughlings Jackson.

If tremors such as I have mentioned are observed, the probability of a disorder of the nervous mechanism of the heart of the nature of Graves's disease is very great.

VI.—I now come to the last step in the investigation, which all will agree to be of extreme importance, but to which I shall devote very few words. The patient is to be asked to remove all clothing from the chest, and a careful physical examination is made according to the usual methods. The following points have the chief bearing on the questions of the nervous reactions of the heart :—

Suppose that the examination has led up to the conclusion that the heart is dilated. Is such dilatation a chronic or a fleeting condition? Is it due to structural change in the myocardium, or is it the effect of a disorder of the nerve mechanism, and in such case capable of *restitutio ad integrum*? The question may be a difficult one to answer. To take an illustration, I have had under my care in the wards of the London Hospital a man, aged 40, with no history of any antecedent disease and only three days' illness, in whom the area of præcordial dulness was greatly enlarged. Pericardial effusion was suspected, but I considered that the distress was due to extreme dilatation of the heart, both right and left chambers. There was much dyspnoea. The pulse rate was 200. This became reduced on succeeding days to 190, 180, and 106; and on the sixth day there was a drop to 80, and afterwards to 72 and 56. There was a gradual recession of the signs of dilatation, and on the thirteenth day after admission the outline of the heart was normal and recovery was perfect. I believe that in this case there was an acute dilatation of the heart, and that the case was one of alcoholic neuritis affecting the vagi or their nuclei of origin. I have had a sufficiency of evidence in many cases to show that the heart may vary considerably in bulk even in the course of 24 hours. It will be remembered that Heitler brought forward much evidence to show that in the normal heart there are rhythmic diurnal variations in volume ('Die Percussionsverhältnisse in normaler Herzen,' Wien, 1891). These considerations are sufficient to urge caution in the acceptance of conclusions as to the exact therapeutic value of special cures, though I cannot doubt that systematic movement treatment and bath treatment are often productive of good results. My contention is that in any case of dilatation of the heart the nerve element of causation must not be lost sight of.

Concerning the auscultatory evidence of murmur, I will deal with one point only—the interpretation of a systolic bruit at or

near the apex. Does it or does it not indicate structural disease of mitral valve or of myocardium? To determine this question we have, first, the method of exclusion. If our examination has led us to conclude that there is a physical disturbance in the normal relations of the heart-chambers, if a loud second sound over the area of audibility of the tension closure of the valves of the pulmonary artery tells of a considerable amount of regurgitation, then, though these signs may be associated with evidences of nervous disturbance, the lesion must be diagnosed as structural. And if there be indubitable signs of dilatation of the left ventricle, with mitral incompetence, even though the first cause would appear from the other available evidence to be neuropathic, the lesions are organic though they may not be permanent. But in no inconsiderable number of cases there is no evidence of abnormality in the size and shape of the heart, no disturbance of the balance of relation of the second sounds, and yet a systolic murmur is heard at or near the apex. What shall we say then? Shall we give the opinion—a very serious one to the patient—that there is valvular or other structural disease of the heart, or shall we say that the murmur is harmless, and will probably pass away?

The attempt to solve the difficulty should be made in some such way as this: the exact position of maximum audibility of the murmur should be determined, and its character and position in the cardiac rhythm noted.

A systolic murmur which is independent of structural disease seldom has its maximum audibility at the exact apex, but slightly to the right, to the left, or above this point. It is usually soft and does not replace the first sound; it does not occupy the whole but the middle period of the systole; it is meso-systolic. It is much influenced by the movements of respiration. As a rule, it is intensified both during expiration and inspiration, especially the latter, but it often becomes inaudible at the end of an expiration. If, therefore, rhythmical *crescendo* and *diminuendo* in the sound of the murmur are heard during the respiratory acts, the murmur is probably not due to organic changes. It is important that auscultation should be practised not only in the erect or sitting but also in the recumbent position of the patient. Very frequently a murmur is very audible in the recumbent position, but disappears when the sitting or erect position is assumed. In such case a confident opinion may be given that there is no structural disease.

In a minority of cases the rule is reversed, and a murmur which is not detected in a patient in the recumbent position becomes audible when the erect or sitting posture is assumed.

Potain has made a most valuable and elaborate study of these, which he calls cardio-pulmonary murmurs. He believes them to be due to causes external to the heart. When the heart is distended in diastole, certain portions of the adjoining lung are pressed against the thoracic wall and the air is squeezed out of them. When there comes the systolic recession, provided always the muscular contraction is accomplished rapidly, the comparatively airless tongue of pulmonary tissue becomes quickly inflated and this sudden inflation causes the sound. The mechanism reverts for its determining cause to the nervous elements. There must be an abnormal suddenness of ventricular contraction, and for the establishment of the validity of the theory it must persist for months and extend for years.

It seems to me that a more satisfactory explanation of these murmurs, which occur in largest proportion in Graves's disease, in chlorosis and other forms of anæmia, and in disorders attended with emotional disturbance, is to be found in a disorder, whether transitory or long continued, of the correlated actions of the different parts of the muscle of the heart during systole. The systole of the ventricles is a complex act. There is, after the filling of their cavities from the auricles, a commencing contraction of the muscles of the ventricular walls and then, very shortly after, a beginning of contraction of the muscoli papillares, which act with sudden energy to pull down the mitral curtains and completely close the auriculo-ventricular aperture; next a ceasing of the energetic tug of the papillary muscles which gradually become flaccid, whilst the muscle of the ventricular wall remains contracted (Roy and Adami). During all this period there is also an effect produced by the muscular contraction upon the auriculo-ventricular orifice. Before the commencement of ventricular systole this orifice was circular. During the period of systole the contraction of the surrounding auricular fibres causes it to become narrower and of oval form (Ludwig and Hesse). The ventricular systole, therefore, is a complex series of co-ordinated actions. It is not difficult to realise that if this correlation be disturbed by a cause affecting the nervous mechanism there may be a slight

leakage into the auricle or abnormal vibratory movements communicated to some of the structures.

Whatever view we may take of the proximate cause there remains the conclusion that the auscultatory evidence which we have considered indicates a nervous disorder of the heart and that it ranks with the other signs of neuro-cardiac disturbance, which I have already pointed out.

I feel that I have very imperfectly and sketchedly fulfilled my task. My plea is that an enquiry as to deviations from the normal of the nervous mechanism of the heart should go *pari passu* with the ordinary means of physical diagnosis. I feel that I shall not be accused of attempting to depreciate the importance of the employment of all the methods practicable for attaining a precise knowledge of the physical state of the heart structures. I yield to no one in my high estimation of the labours of those—Laennec, Bouillaud, Avenbrugger, Hope, Williams, Marey, Chauveau, Burdon Sanderson, Galabin, and others—who have done so much for the attainment of precision in the physical diagnosis of diseases of the heart. But my opinion is that in these days it is of equal importance that the nervous conditions of the cardiac reflex be enquired into by a process resembling that which an investigator of cognate diseases of the nervous system employs. These things ought we to do and not to leave the others undone.

JOHN ARDERNE AND HIS TIME.

By WILLIAM ANDERSON, F.R.C.S. Eng.

WHEN the council of the Medical Society of London honoured me by an invitation to write a paper for the first meeting of the session, 1897-98, it appeared to me that we might be interested to pause in the midst of our progress through the closing years of the nineteenth century and transport ourselves for a brief space into the lurid and fitful light of the later middle ages, there to make, or renew, an acquaintance with an ancient and most worthy master of the craft of surgery whom we should all delight to honour.

The name of John Arderne is an unfamiliar one even for surgeons, although numerous manuscript copies of his writings

are preserved in the British Museum and at St. John's College, Oxford, and appreciative reference to his work has been made by many high authorities on medical and surgical history—notably, by Dr. Daremberg in his '*Histoire des Sciences Médicales*,' by the late Mr. John Flint South and Mr. D'Arcy Power in '*The Craft of Surgery*,' and by my learned colleague, Dr. J. F. Payne, in the '*Dictionary of National Biography*.' It is to the last-named gentleman that I owe my first introduction, now some years ago, to the subject of my discourse. The time at my disposal will allow only a very imperfect study of the man and the time, but if I am fortunate enough to induce a few of the members to inquire further into a curious page of surgical history my chief object will be achieved.

John Arderne, a contemporary of Chaucer, Wycliffe, Froissart, Petrarch, and Guy de Chauliac, belongs to a period of extreme interest in the evolution of general and surgical literature, and it will be seen that he within his sphere gave no mean aid towards the advance of a higher culture. Of biographical facts we have but little record, but it is known that he was born in 1307,* and that he practised at Newark in Nottinghamshire from 1349, the year of the plague, until 1370, when, at the age of 63 years, he settled in London. Thenceforth he appears to have devoted his days to the publication of his experiences in the form of treatises upon medicine and surgery. It is surmised that he had been previously attached for a time to the English forces during the French wars in the capacity of field surgeon, for there is no doubt that he was well acquainted with France and its language, and that he had an extensive experience in the treatment of wounds; but although he calls himself "*Chirurgus inter Medicos*" there is nothing to show that he possessed a Master's degree or any formal licence for the exercise of his calling. However this may be, his writings prove that he was a man of clerkly attainments, with a good knowledge of Latin and French, and well read in the available literature of his profession, quoting freely from the works of the mediæval surgeons, the Arabs, and even from the Greeks. That he achieved fame as a surgeon is no less certain. He refers with pardonable pride to a number of distinguished patients whom his ministrations had restored to health, and he is said to have received from the Black Prince a grant of land in

* Sloane MS., No. 75.

Connaught, and with it the right to prefix the noble particle "de" to his name. It is hard to say whether the position of an Irish landlord was more enviable then than now, but the colossal fees he was able to command from his wealthy clients probably rendered him independent of his Hibernian rentals. In his case, as in that of Guy de Chauliac, the literary labours which have preserved his memory were the outcome, and not the cause, of his success, for it was not until he had won an honourable repose that he found leisure to give the world the secrets of his practice. His writings, couched in fair Latin and dealing with nearly the whole of medicine and surgery as they were then known, were noteworthy productions of a reactionary but still illiterate age, and they appear to have been duly valued during the next three centuries, although none received the honours of the press except an abstract translation of an essay on fistula, which was printed in 1588 by John Read as an appendix to a translation of Franciscus Arceus on Wounds.

To understand the position of Arderne it is necessary to recall something of the time in which he lived. His period was signalised as one of struggle for emancipation from a long-endured state of physical and intellectual bondage; but science was permitted to lag behind, while metaphysics, astrology, and alchemy took the place of solid research. The study of medicine was perhaps more deplorably in the rear of progress than any other branch of learning. For many hundreds of years the preservation of the lore of the Greeks from oblivion was left almost wholly to the Jews and Arabs, until at last the giant Europe, so long torpid, roused enough to stretch its stiffened members, first in Italy, then in France, then in England, but only to doze again and again before sinking into a new century of slumber. When Arderne was in his prime there was but one scientific centre in Europe where any pretence of surgical teaching was maintained. The once famous school of Salerno had already become effete. The Italian revival under William of Saliceto, Theodoric, Lanfrank, Mondini, and others, had given place to the old stagnation against which Bologna had made a valiant fight before sinking into premature decay. Paris, too, after listening to the teaching of Lanfrank and of Henri de Mondeville, had resolutely turned her face to the wall, and Montpellier alone, thanks in part to its geographical position, which brought it

within nearer touch of Arab learning, was liberal enough to sanction the cultivation of anatomical and surgical science, not, indeed, within the walls of its university, but in extra-mural classes, in which, amongst others, Guy de Chauliac, the greatest surgical figure of the age, took a leading part. Even this tolerance soon died out, and Montpellier went the way of Salerno, Bologna, and Paris, but not until the work of Guy de Chauliac and John Arderne was ended. In England the age of Chaucer and Wycliffe made no provision whatever for medical progress, and there was no school of anatomy or surgery throughout the land, and no English contributions to the literature of the subjects could be said to exist, if we except such theoretical references as may be found in the works of Gilbertus Anglicanus and John of Gaddesden, written, like all medical treatises of the time, in Latin. It is true that the writings of the Arab physicians, which gave an imperfect sketch of Greek surgery, and those of William of Saliceto, Roger, Theodoric, the Four Masters, Lanfrank, de Mondeville, and after 1363 the masterpiece of compilation, the ‘*Chirurgia Magna*’ of Guy de Chauliac, were also procurable in Latin guise, but the knowledge to profit by them was rare indeed in the ranks from which the representatives of English surgery were drawn.

In the fourteenth century the lot of those of our countrymen who fell in need of surgical ministrations was a sadly precarious one. The art was regarded by the educated physicians then and for centuries later as beneath their dignity. As expressed by our Elizabethan surgeon, John Read, in the doggerel which he and his fellows loved to prefix and append to their professional writings:—

“Chirurgery moreover is
 abhorred of the Phisition,
 Who doth esteeme it as a thing
 to vile for his profession.”

Outside this august and highly conservative body were several classes of practitioners into whose hands surgery was allowed to sink. First of these came the Masters of Surgery—a small body of men, here, as in France, distinct from the Barber surgeons, but scarcely yet banded into the association that somewhat later strove so well to secure a fitting status for their calling. They held no special position in the social scale of the time and appear

to have sprung originally from the same level as the barbers, but to have won especial experience and recognition by the exercise of surgery in the wars and civil disturbances of the time, and in certain instances to have gathered some scholastic training. With this group John Arderne is probably to be classed, and another example may perhaps be found in the person of the author of the remarkable anatomical manuscript brought to light two years ago by Dr. Payne.* It is these men, few in number, weak in influence though they were, that we must regard as the most honourable representatives of surgery, and there is no doubt that a dozen men of the stamp of Arderne would have changed the whole history of English surgery. Yet the chirurgery of the Master Surgeon was scarcely a handicraft at all, for the hand played little part in it except in the application of ointments and plasters. The Barber-Surgeon, the bone-setter, and the travelling specialists did the rest.

Next to these came the Barber-Surgeons, who, thanks to the successive decrees of the Popes in the twelfth, thirteenth, and fourteenth centuries against the practice of medicine and surgery by the priesthood, had inherited the manual functions of the erstwhile monkish physicians, and had begun to develop ambitions above the blood-letting and tooth-drawing, which for some mysterious reason had long been attached to their trade. They had not, however, reached or merited any standing of importance, although as early as 1375 they were strong enough in London to appeal successfully to the corporation for the right to summon persons who practised surgery without due qualification. They themselves were little more than uneducated mechanics, to whom the literature of surgery was a closed book. Much experience must indeed have fallen to their lot, but it fell on a barren soil. Their regular practice seems to have been limited to venesections and dentistry, and to the treatment of contusions, wounds, ulcers, and a few other simple affections; but all ailments outside these were blindly attacked or more discreetly left alone. Neither the Master Surgeons nor the Barber-Surgeons attempted to deal with the whole of surgery. Beyond the mere opening of a vein or an abscess or the extraction of a tooth there were few operations that were held within the scope of orthodox practice. Arderne says that he knew no man in his time "in all England or in lands beyond the sea" who could cure a fistula—he alone did it. Even

* 'British Medical Journal,' January 25th, 1896.

operations so simple and then so necessary in warfare as the extraction of arrow-heads were often surrounded by absurdly superstitious formalities. The surgeon and patient were first to be clean shaven, then to say three Paternosters and three Aves in worship of the Trinity, and it was not until after a solemn adjuration to the arrow, bidding it come out in the name of God, that the surgeon was permitted to attack the actual task, which was supposed to be miraculously facilitated by the tribute to the celestial powers. Hæmorrhage, except from a vein opened under proper astrological conjunctions, was a terror to the surgeon, upon whom the idea of the ligature had not yet dawned; strangulated hernia and a score of other grave but remediable conditions were left to the merciful hand of death, and many common affections that should have been perfectly within the sphere of the general surgeon, such as fractures, dislocations, stone in the bladder, &c., were abandoned without a struggle to a low class of specialists of whom we may next speak.

The Specialists constitute the third group of surgical practitioners, perhaps outnumbering both the Master Surgeons and Barber-Surgeons. The whole country was pervaded by a troop of foreign and native bone-setters, lithotomists, herniotomists, oculists, and others, following traditional methods unguided by anatomical knowledge, but sometimes by dint of experience attaining a fair amount of skill and success, and living upon an honestly acquired reputation. Most of them, however, travelled from place to place advertising themselves by barefaced methods not even yet quite extinct or inefficacious, often mingling their handicraft with arrant imposture, and ready to shift their quarters with all needful celerity as soon as the results of their operations threatened trouble to themselves. Such men for this reason were popularly known in France as *coureurs*. That they should be permitted to exist and thrive might perhaps be regarded as the greatest indictment of the surgery of the time were it not that the bone-setter, as ignorant and as impudent as his forbears, is still amongst us even in this last decade of the nineteenth century.

Below all of these there was still another class of pretenders to surgery—a motley crew of base empirics of both sexes, without even a pretence to real knowledge, trading upon herbs, ointments, embrocations, pills, amulets, and the like, mainly for use in such ailments as were capable of recovery in defiance of their

intervention. It is unnecessary to speak of them further, their name is legion and their methods eternal, but in that day the orthodox was so little remote from the heterodox in science that poor suffering humanity had small chance of escape.

Finally, outside these various practitioners for gain lay the Amateurs, a numerous body, often of gentle birth, and nearly all of the gentler sex, trained by reading or personal instruction in the use of herbs, drugs, and simple dressings, and prepared to act on emergency as nurses or doctors amongst their families, friends, or dependents. Students of Chaucer may find an inkling of the domestic medical lore of the period in the 'Nonne Preeste's Tale,' and they may recognise that Damoysele Pertelote still survives in the remoter parts of our provinces. There is little doubt that many of these kindly and charitable people did much good in their generation, and knowing what we know of the bulk of their professional rivals we may think the patients who came under their tender ministrations were not always the most unfortunate amongst sufferers in mediæval England.

Such, then, was the state of surgery when John Arderne came upon the scene. Shorn of almost all the dignity and power it had acquired under the Greeks its prospects were of the gloomiest. What Arderne did towards its revival may be seen by a study of his works.

There are no less than 22 Arderne manuscripts in the British Museum in the original Latin or in early English translations, some of course repeating or overlapping others in matter.* They treat more or less fully of almost every kind of medical and surgical disease then known, mainly from the clinical aspect, and with abundant directions for treatment, and nearly all are illustrated with drawings of diseases, surgical appliances, medicinal plants, and other things appertaining to the text. Some of the sketches are curious. One, representing John Arderne examining a case of fistula in ano, has been discreetly reproduced (without the patient) in South's 'Craft of Surgery'; another shows the astrological relations of the different parts of the body; fistulas, penile sores, acne rosacea, facial tic, and many other conditions

* List of Arderne MSS. in the British Museum, copied from Catalogue of Manuscripts, vol. ii: 2062, 238.1, 3844, 6.8, 341.1, 3548, 2122, 347.1, 795.2, 56, 76.1, 277.2, 563.2, 2271, 75.12, 335, 76, 3428, 89E, 85B, 86D, 29.301.

are recognisably figured, and one MS. even shows a portrait of a mad dog. There are, however, no anatomical diagrams. The text consists partly of short essays on the treatment of various symptoms and ailments, partly of elaborate dissertations upon certain sections of surgical disease, as fistula in ano, eye diseases, stone in the bladder, and on wounds inflicted by various weapons, closing with descriptive accounts of the drugs and preparations employed by the author, and careful directions for their use. There is little or no reference to fractures and dislocations, and the only operations described in detail are those for fistula in ano and for cutting a stone out of the urethra, but mention is made of a special instrument for crushing a vesical calculus. Avicenna, Haly Abbas, and the French and Italian surgeons are freely quoted, as well as certain of the writings of Hippocrates and Galen, and the learning of the author is frequently shown also by the use of Greek, Arabic, and French expressions. There is no attempt, however, to construct a complete and systematic arrangement of the diseases the mediæval flesh was heir to from crown to toe after the manner of many of the earlier writers. The English translations are all of early date, the most important of the number being attributed to the beginning of the fifteenth century, and hence probably representing as nearly as may be the language that John Arderne himself would have used in his professional discourse. As this is acknowledged to be the most interesting and original section of the author's work, and will soon, I trust, be brought within reach of the profession and public by the Early English Text Society, I propose to speak of it so far as the time at my disposal will allow. I have to express my thanks to Dr. Furnivall for the loan of a complete transcript which has enabled me to study the style and matter more carefully than would otherwise have been possible. The section in question treats of ischio-rectal abscess, of fistula in ano, and other affections of the lower end of the bowel, and of sinuses in connection with the bones and joints, and is supplemented by a description of the composition and uses of the various preparations employed by the author, and prefaced by some words of counsel to the neophyte who aspires to success in medical practice. The personality of Arderne is perhaps best shown in this quaint preface. It has already been printed *in extenso* in South's 'Craft of Surgery,' but a few paragraphs may be quoted now. The

introduction, entitled "Of the Manner of the Leech,"* begins in a spirit of pious humility and charity that reappears constantly in the course of Arderne's writings. The rest is too pithy to need comment.

"First it behoveth him that will profit in this craft that he set God afore evermore in all his works and evermore call meekly with heart and mouth his help, and sometimes visit of his winnings poor men after his might, that they by their prayers may get him grace of the Holy Ghost. And that he be not yfounden temerary or boastful in his sayings or in his deeds. And abstain he him from much speech and most among great men. And answer he slyly [cautiously] to things asked that he be not ytake in his words forsooth if his works be ofttime known, for to discord from his words and his behests he shall be holden more unworthy and he shall blemish his own good fame: wherefore saith a versifyer, '*Vincat opus verbum, minuit jactantia famam*'—'(let) work overcome thy word, for boast lesseneth good lose (reputation).'

"Also be a leech not much laughing nor much playing. And as much as he may without harm flee he the fellowship of knaves and dishonest persons. And be he evermore occupied in things that beholdeth to his craft, either read he, or study he, or write or pray he, for the exercise of books worshipping a leech. For why, he shall both be holden and he shall be more wise. And above all this it profiteth to him that he be founden evermore sober, for drunkenness destroyeth all virtue and bringeth it to nought, as saith a wise man, '*Ebrietas frangit quicquid sapientia tangit*' (Drunkenness breaketh whatso wisdom toucheth)."

The next counsel is one that cannot even yet be regarded as superfluous: "Scorn he no man, for of that it is said, '*Deridens alios non inderisus abibit*' (he that scorneth other men shall not go unscorned). If there be made speech to him of any leech, neither set he him at nought nor praise him too much, or commend him, but thus may he courteously answer: 'I have not any knowledge of him, but I learned not nor I have not heard of him but good and honest.' And of this shall honour and thankings of each party increase and multiply to him, after this, 'Honour is on the honorant and not on the honoured.' "

* In these quotations the author has ventured to modernise the spelling, but has kept strictly to the language of the translation.

Next he becomes more purely worldly and passes on to private counsel not intended for lay ears: "When sick men forsooth or any of their byside [household] cometh to the leech to ask help or counsel of him, be he not to them over few [brief] nor over homely [familiar] but mene [gracious] in bearing after the askings of the persons, to some reverently, to some commonly, for, after wise men, 'overmuch homeliness breedeth despising.'"

"If he will favour to any man's asking make he covenant for his travail and take it beforehand.* But advise the leech himself well, that he give no certain answer in any case, but [unless] he see first the sickness and the manner of it, and when he hath seen and assayed it, though it seems to him that the sick may be healed, nevertheless he shall make prognostication to the patient [of] the perils to come if the cure be deferred. And if he see the patient perceive busily the cure then after that the state of the patient asketh (according to the position of the patient) ask he boldly more or less, but ever beware of scarce askings, for over-scarce askings setteth at nought both the market and the thing. Therefore for the cure of fistula in ano, when it is curable, ask he competently of a worthy man and a great. An hundred marks or forty pounds, with robes and fees of an hundred shillings for the term of life by year. Of less men forty pounds or forty marks ask he without fees. And take he not less than a hundred shillings, for never in all my life took I less than an hundred shillings for cure of that sickness. Nevertheless, do another man as him think better and more speedfully."

"And if the patients or their friends or servants ask by how much time he hopeth to heal it, evermore let the leech byhete [state] the double that he supposeth, that is if the leech hope to heal the patient by twenty weeks—that is the common course of the curing—add he so many over, for it is better that the term be lengthened than the cure, for prolongation of the cure giveth cause of despairing to the patients when trust to the leech is most hope of health. And if the patient consider or wonder or ask why that he put him so long a time of curing since that he healed him by the half, answer he that it was for that the patient was strong-hearted and suffered well sharp things, and that he was of good complexion and had able flesh to heal, and feign he other

* In another place he says: "And then accord they of covenant, of which covenant all excusations yput back, take he the half beforehand."

causes pleasurable to the patient, for patients of such words are proud and delighted."

"Also dispose a leech him that in clothes and other apparelings he be honest, not likening himself in appareling or bearing to minstrels, but in clothing and bearing (ob)serve he the manner of clerks. For why, it seemeth any discreet man yelad with clerk's clothing for to occupy gentleman's boards. Have the leech also clean hands and well shapen nails and cleansed from all blackness and filth."

"And be he courteous at lords' boards, and displease he not in words or deeds to the guests sitting by. Hear he many things, but speak he but few, for a wise man saith: 'It (be)seemeth more to use the eyes than the tongue.' And in another place, 'If thou had been still thou had been holden a philosopher.' And when he shall speak, be the words short, and as much as he may fair and reasonable and without swaying. Beware that there be never founden double words in his mouth, for if he be founden true in his words few or none shall doubt in his deeds."

"Have also a young leech good proverbs pertaining to his craft in comforting of patients." Here follow other curious examples of bedside exhortations from Holy Writ, heathen philosophy, and homely proverbs. "Also it speedeth that a leech can talk of good tales and of honest that may make the patients to laugh, as well of the Bible as of other tragedies, and any other things of which it is nought to charge, while that they make or induce a light heart to the patient or sick man."

"Discover never the leech unwarily the counsels of his patients as well of men as of women, nor set not one to another at nought though he have cause; that he be not guilty of counsel, for if a man see ye heed well another man's counsel he will wist better on ye."

"In conclusion, many things, forsooth, well (bene) to be kept of a leech without (besides) these that are said afore, that may not be noted here for over much occupying. But it is not to doubt that if the foresaid be well kept that they shall give a gracious going to the user to the height of worship and of winning, for Cato saith, '*Virtutem primam imputa compescere linguam*' (the first virtue trow you to be to refrain the tongue)."

Passing to the technical chapters of his work, we may take

first his account of fistula in ano. Every surgeon who reads this attentively will admit that it stands almost alone amongst English surgical writings down to the time of Richard Wiseman as a record of painstaking clinical observation and of practical research after success in treatment. His description is rich in experience, and his methods are recited with a remarkable fulness of the kind of detail that only experience can teach. It is true that his operations were identical in principle with those practised by the Greeks, but he had devised appliances which in his hands gave results that we should not be ashamed to claim in our day. There is, indeed, little that we know in this particular item of surgery that he did not know as well or better. I fain would quote some of his crisply written sentences, but it may not be.

Following the section of fistula is a description of cancer of the lower end of the rectum, under the name of "bubo in the lure." He not only recognises the nature and fatality of the disease, but sets forth clearly its distinctions from chronic diarrhœa or dysentery, and speaks of the injury that may be done by the administration of unsuitable remedies under a wrong diagnosis. Prolapsus ani he describes as a "going out of the lure." His notes upon fistulæ, or sinuses in the fingers, the legs, over the joints, and in other places, are more superficially treated, but are still personal observations that appear to owe nothing to tradition. The essay on hæmorrhoids is of a somewhat different kind. Here, for the first time, he appears as the compiler, conscientiously avowing his indebtedness to the older masters of his craft—to Bernard of Gordon, Richard, Roland, Roger, Gilbertus Anglicanus, Guy de Chauliac (Mayster Guy) "and other expert men whose doctrine he had beholden and seen." This is less happy than his more practical and original writings, and is more obscured by the nebulous theories of his predecessors. Nevertheless, his treatment is fairly sound, although he has been unable to shake off some ancient superstitions shared by wiser and less wise men than himself—for example, that the surgeon must not operate about the anus when the moon is in Scorpio, Libra, or Sagittarius, because these signs token the part in question, and that hæmorrhoids and menstruation are provoked by phlebotomy of the internal saphenous vein, while blood-letting from the external saphenous vein has the directly opposite effect; but these and other beliefs were inevitable in an age when the physiological

and astronomical dicta of the ancients were accepted, like Holy Writ, as unassailable by human reason and beyond appeal.

Passing next to the discussion of clysters in constipation, our author finds himself again upon the safe foundation of an extensive experience, and he displays a faith in his methods capable of moving mountains of obstruction. "Be the leech not negligent nor foolhardy in his working with clysters, for it is a work of a perfect mystery, for the which I have gotten a hundred times great honour with lucre in diverse places. For why? At London, when Lombards oftentimes administered clysters in their manner to colic men and other men constipate, I, forsooth, with the aforesaid manner of clystering at the first time, within the space of a furlong or two, I delivered the patient for certain, the Lord being mene." It will be noticed that, although he refers somewhat contemptuously to the pretentious quacks that were his rivals, he never condescends to the violent and undignified diatribes in which his Elizabethan successors were wont to indulge under like provocation.

The final section, devoted to the enumeration of the preparations used in surgery, is full of interest. Many of his ingredients, such as arsenic, verdigris, sulphate of iron, alum, &c., were powerful as stimulants, astringents, or antiseptics, and appear to have been used with judgment; and with characteristic honesty he tells of his mistakes as well as of his successes—how, for example, he had caused sloughing of the leg of a patient, with subsequent necrosis of the tibia, by the unwary use of a mixture of sublimed arsenic and orpiment. Another set of applications consist of oily preparations of the petals of roses, violets, and camomile flowers, oil of sweet almonds, and oil of juniper, the uses of which are clearly and simply stated, while other much-lauded drugs, such as woodbine and scabious, have succumbed to changes of fashion, like so much of the *materia medica* of the present century. He, however, avoids the loathsome elements that so commonly disgrace the formulæ of his and much later times, and there is but one of his prescriptions that shows an element of superstition, the so-called *sanguis veneris*. This, for the poor, is a compound of Alkanet with olive oil—a safe, simple, and cheap application for wounds and ulcers; but for the wealthy it is made up more expensively, with aloes, myrrh, and other drugs, and contains as its most valued ingredient "the blood of a maiden virgin or of a maiden damosel

about nineteen or twenty years which was never impregnated tho' she be corrupt"—for, adds our cautious author, "virgins cometh now full seldom to twenty years." The blood, too, "must be drawn out in the full of the moon, the moon being in Virgine, and the sun being in Piscibus." Another compound, called "oil of Masticus" (Masticus, 1 ounce; thuris albi Alexandriæ, $\frac{1}{2}$ ounce; ol. rosæ, 1 lb.), of sufficiently simple composition, must be referred to, for its virtues, as set forth in all good faith by Arderne, might give a lesson to the modern advertiser of electric belts or liver pills. "It helps," says he, "to every akying of stomach, joints, shoulders, liver, spleen; helps to man in the ethic, in the phtisic, or disposed to the lepra and to the morfie [morphœa], and to old men and consumed. And, anointed, it moisteth the skin and removeth and restoreth the flesh consumed, and comforteth the stomach and maketh it to defy chills; it represseth abominations in the stomach, it giveth appetite, it sharpeth the minde, it consumeth all cold passions. Finally, it availeth to whole men and to sick in all necessities." It is strange that with so all-embracing a remedy he did not regard the rest of his pharmacopœia as superfluous.

Of internal medicines there are few, but two of the number depend on opium for their chief effect. One of these is recommended as an anæsthetic, "so that the man shal not feel whatsoever is done to him," and the other had won a reputation of a more sinister kind, "to make a man sleep against his will after the manner of ribalds and trowsans [truants?] in France, that fellowshippeth them by the ways to pilgrims, that they may rob them of their silver when they are asleep."

With these our citations must end. It is difficult at the present time to adjudge John Arderne's claim upon posterity, but when we remember into what low repute the art of surgery had fallen in his day in England, and how honestly and successfully he strove to elevate it by his example and teaching, we can scarcely do him too much honour. His art was not all we now understand as surgery, although he at least revived two of the ancient operations of the Greeks; but he was a true clinical observer, and based his treatment on experience and reason rather than on precedent and superstition. He was, moreover, almost the only English surgeon of his century who is known to have combined the actual practice of his calling with a scholastic training

sufficient to master the surgical literature then available and to commit his views and results clearly to writing. It would be too much to expect that he should rise entirely above the astrological, humoral, and circulatory myths of his day, but he allowed his theories to influence him far less than his experience, and he stands as a singularly capable surgeon according to his lights and opportunities, holding his craft in due honour, and doing more than any other Englishman of his own time or of the three following centuries to raise it in the world's esteem. If we compare him with his great French contemporary, Guy de Chauliac, we shall find in both the same straightness of purpose, the same solidity of reasoning, and the same harmless superstitions. Guy de Chauliac was a compiler of genius with a remarkable literary method and sense of completeness, while Arderne appears to have been the better clinical student and the more practical surgeon, but as a writer, though gifted with considerable power of expression and an amusing aptitude for terse and pointed quotation, he was somewhat lacking in that instinct of order which in an over-strained and often misapplied form distinguished the earlier European surgical authors. The Frenchman constructed a surgical text-book that in its way stood far above anything that had preceded it, and guided the whole of Europe for two hundred years; the Englishman left an assemblage of original observations that offered better lessons to his followers than could be drawn from any digest of the writings of his predecessors. It cannot be said that either added any striking facts or principles to the legacy of the Greeks.

Of the man himself his book conveys a vivid picture. It is easy to see him as the leech of courtly and obliging manners, sober in attire and moderate in speech, and endowed with a self-restraint born of self-respect, with a tact that bore him well through the many difficulties that must have beset the thorny path of the chirurgion in his day, and with a strong common sense that never rose too near the dangerous level of genius; a good man and true, kindly and honest, but shrewd withal, with a quick eye to the main chance, and a capacity for raising expediency to the dignity of principle. He was through all a surgeon, a scholar, and a gentleman, and in the records that he bequeathed he stands before us as one whom we, his professional descendants, may accept with pride and veneration as the Father of English Surgery.

October 25th, 1897.

ON THE LOCALISING FACTORS IN RHEUMATIC FEVER AND CHOREA.

By THOMAS CHURTON, M.D.

THIS paper will, I fear, seem to be greatly belated. In 1895, on the invitation of the honorary secretaries of the Medicine Section of the British Medical Association, an analysis of 135 cases of rheumatic fever was made as a contribution to the discussion on rheumatism in that year. By an accident the paper was lost for some months. When found and returned to me, some additional observations were made; a larger number of cases were analysed; the paper was then read at the Carlisle meeting of the Association in 1896. Misfortune pursued it; there was barely time for reading, none at all for discussing it. A distinguished member of this Society, then present, kindly suggested that since similar statistics had, he believed, not been collected, they might furnish matter for discussion here.

The first series of 135 consists of cases under my care in the Leeds Infirmary in the years 1891-95 inclusive. The three chief details tabulated are:—(1) *State of health before the attack*, an impression having been formed that acute rheumatism scarcely ever attacked anyone who was in even fairly good health; (2) *the assigned cause*; (3) *the joints first affected*, it having appeared in many cases that these joints were always in the limb or limbs which had been most exposed to the cause assigned, whether chill, wetting, or injury. In some cases the presence of constipation, indicanuria, or of acetonuria was noted.

(1) Of the 135, the health before the attack was distinctly and admittedly defective in 98; it was doubtful or there was no evidence in 28; it was stated to be good or fairly good in nine. Of these nine the details are as follows:—(1) A girl of 15, a leather ironer, was subject to constipation. (2) A girl, never very strong, was subject to sick headaches. In the remaining cases the causation was either severe or long continued. (3) Male, aged 17, repeated wettings and strain at work. (4) Man, 34, a series of colds five weeks ago; arthritis developed slowly. (5) Man,

height, 6 feet 3 inches; weight, 11 stone; age, 22; work is hard and wet; worked a week with pain in legs. (6) Man, aged 19; chills at football. (7) Man, aged 31, formerly a soldier; drinks and smokes much; cause assigned, wet through all day. (8) Male, aged 17, feet and knees often wet at work (in February). (9) Male, aged 21, looks strong; has had four previous attacks; kept wet clothes on four hours. Of the 98 previously in imperfect health, 23 were ill-developed and had never been strong; 16 were exhausted by overwork or want of food, influenza, anxiety, &c.; 12 had had severe previous attacks of rheumatism; the others had various chronic ailments—anæmia, dyspepsia, leucorrhœa, &c.

(2) *The causes assigned for the attack were:*—In 62, a wetting; in 15, chill; in 13, damp clothing, or damp house, or wet weather; in two, injury—sprain and a blow on the legs; in nine, constipation, fatigue, gonorrhœa, or influenza; in two, insanitary house; in five no cause could be found, but indicanuria existed; in 27 the causation is not stated.

(3) *Relation of joints first attacked to the impact of the depressing cause*—wetting, chill, or injury. The legs were wet or chilled in 27 cases; pain in the legs occurred first in them all. The legs were injured in two cases; the first pains were in the legs in both. The shoulders were wet in three cases; pain was in the arms first in all three. In one case the wetting was general, and the patient sat for some hours in a theatre in wet clothes. Pain began in his back the same night and in all the joints of his limbs next day. In most of these 135 cases there is not sufficient, though there is often suggestive, evidence in the notes to establish the relation. But in no case was an exception found to the rule that the limbs which are most or alone chilled or injured are the first to manifest arthritis or pain.

In a second series of 450 cases, collected from 1880 to 1890, in a period when attention was not specially directed to this enquiry, and 1896 to 1897, the above conclusion as to the impact of chill or injury being the usual determining or localising factor is maintained definitely in 113. A few apparently contradictory cases occur. Thus, in 1888, a labourer, who attributed his attack to having no overcoat in frosty weather, had pains first in the knees; a French polisher, who gave the same reason for his attack, also had first pain in ankles and knees; a girl, aged 16, who was wet about the shoulders and trunk, had pain first,

according to the notes, in the right foot; and a woman, aged 26, who assigned wetting to feet as the cause, complained first of her throat and right hand. The notes in cases of rheumatic fever are often scanty. The difficulty of correctly ascertaining the facts and dates of causation is very great. That a few cases apparently antagonistic to any general proposition may be found in the records no one will wonder at who recalls his own difficulties in the examination of hospital patients, or, I may perhaps add, his own difficulties, if ever he has been ill, in remembering precisely the dates on which and the circumstances by which his illness was brought about, unless its onset was specially striking and incisive.

To ascertain the exact facts it is very often necessary to re-examine and even cross-examine both the patient and the friends. Their memories slowly, but usually in time surely, produce the facts. Thus, a girl, aged 20, whose attack of general arthritis began with pain in or about the lower ribs, was for many days quite unable to give any reason for this unusual localisation. Repeated examination of herself and her friends at length obtained the following history:—After four weeks of unusually hard work at a mill three miles distant from her home, she had on a certain Saturday morning hurriedly washed her head and the whole chest to the waist at 6 o'clock, dried her hair very imperfectly, had no time for any breakfast, ran most of the way to the mill, worked without food from 7.30 a.m. to 2.30 p.m., and then walked home, extremely fatigued. The same evening pain in the side and all over the head began; afterwards her shoulders and other joints were affected. After my experience in the investigation of this case I am less ready to accept mere want of evidence as antagonistic. In 21 cases under observation in 1896, when greater care was taken to sift the evidence, 14 were found to support the conclusion, and there was not one clearly opposed to it. There were seven doubtful cases:—(1) A negro circus rider; causation not found; pain began in right foot, which was severely injured a year ago. (2) A pit-boy, aged 15, had had rheumatism twice; pain began in right knee; he could not give any cause. (3) A Jew, aged 25, lived in a damp house; pain began in knees. (4) A man, aged 31; three or four previous attacks; house damp; bed perhaps damp; first pain in left shoulder. (5) Woman, aged 27, had rheumatic fever at 18; was wet through on shoulders and trunk three months ago; then had pain, first in neck and

back, afterwards in arms and legs, but was not laid up; perhaps had damp clothing three weeks ago, followed by pain in spinal joints at first, and soon after in shoulders, elbows, knees, ankles, and feet—not in hips. The uncertainty in this case is with respect to the dampness of the clothing. (6) Girl, aged 13; cause assigned, damp house; first symptom, sore throat; afterwards, pains, &c., in knee, ankle, and right elbow, and erythema nodosum. (7) Girl, aged 8; pain began in feet and legs; no localising cause elicited—it may have been slight, as the child had eaten many sweets, ices, &c., and had abundant acetonuria. A complete list of the 21 cases is appended (*see next page*).

There is, of course, nothing new in this. It has always been recognised that local impact of chill or injury is effective in determining the site of a lesion, as in the case of facial palsy from unilateral chill in a railway carriage; arthritis from sprain in a gouty subject, &c. More than one speaker at the discussion in London stated that in the production of rheumatism two factors are associated. Sir Dyce Duckworth says ('British Medical Journal,' January 11th, 1896, p. 70) that "a certain diathetic predisposition is necessary. Under conditions of lowered vitality persons thus predisposed become a prey to infection by some microbic organism which generates a toxine whose ravages are specially determined to joints. . . . No one can doubt the influence of the nervous system and of certain local conditions in determining sites of election for the disease." By accepting such opinions as these we arrive at a "toxine + local injury" notion of the disease. If the toxine is glycocine, as Dr. Latham believes, it is no wonder that the special organism of rheumatic fever cannot be isolated. The fault is in the digestive epithelia, including the liver cells; the microbes or ferments are in the stomach and intestines, not in the blood and the tissues of the joints, where hitherto bacteriologists have looked for them.

If, then, rheumatic arthritis is due to a toxine which is directed to certain joints by a localising chill or injury, it seems probable that chorea, if it be due to the same toxine, acting on the brain, will be localised therein by some discoverable circumstances. It is true, however, that in 150 cases of chorea tabulated from hospital notes, the double connection is demonstrated in very few. In many of the cases fright or emotion is assigned as the cause, but there is no positive evidence (though in many cases it is not

| Date. | Name. | Age. | Assigned Causes. | Order of Attack. | Remarks. |
|-------------------------|--------------------------------------|------|--|---|--|
| 1896. January 27 ... | Sarah E. (servant) ... | 19 | Feet wet in rain. Waist damp (January 13). | 1. Knees. 2. Back. 3. Shoulders. 4. Erythema nodosum (21st). | |
| February 18 ... | Wm. B. (miner)... | 15 | Not elicited | 1. Right knee | Two previous attacks. |
| February 18 ... | Annie T. | 8 | Not elicited | 1. Feet and legs | Eats ices, &c., very freely. |
| March 2 | Edith W. (servant) ... | 21 | Feet wet while washing clothes. | 1. Feet (heels) and ankles ... 2. Knees and thigh. 3. Right hand. | Attack 18 months ago. |
| March 11 | Michael F. (driver) ... | 17 | Feet and legs wet for two hours. | 1. Legs painful and swollen. | |
| March 12 | Albert M. (driller) ... | 13 | Knees | 1. Right ankle and knee. 2. Left ankle and knee. 3. Back, shoulder, and arms. | |
| April 2 | Luke T. (market salesman) ... | 25 | Wet in rain—legs most wet and for four hours | 1. Knees 2. Ankles. 3. Wrists. | Rheumatic fever five years ago. |
| April 22 | Sarah R. | 13 | "Damp house" | 1. Sore throat. 2. Knee and ankle. 3. Right elbow, and erythema nodosum. | |
| April 24 | Alfred K. | 15 | Head, feet, and legs very wet in rain on April 16. | 1. Headache and pain in knees on 17th. 2. Erythema nodosum (19th). | Not robust. Had erythema on face with fine scales seven weeks ago. |
| May 12 | Chas. E. (packer) ... | 25 | "Damp house" | 1. Knees. | |
| May 14 | Jas. R. (labourer in water-courses). | 33 | Working in wet (feet and legs). | 1. Feet and legs, ankles, hips, and slightly in knees. 2. Wrists, &c. | |

| Date. | Name. | Age. | Assigned Causes. | Order of Attack. | Remarks. |
|---------------------|-------------------------|------|---|--|--|
| 1896. May 19 ... | Lewis A. (circus-rider) | 28 | ? | 1. Right foot ... 2. Knee. 3. Left hand. | Negro. Right ankle severely hurt a year ago. |
| June 3 ... | Fras. H. (factory) | 31 | Damp bed and house ... | Shoulders—left first ... | Three or four previous attacks. |
| June 4 ... | Florence B. ... | 21 | Scanty clothing; no shawl; washing house. | 1. Shoulders and arms. 2. Knees and ankles. | |
| June 22 ... | Chas. H. (factory) | 15 | Wet "all over"—trousers, coat-sleeves, &c., in rain on 17th. | "Pains all over" on 18th. Feet, ankles, and wrists swollen and very painful. | Several previous attacks, beginning in legs, while working in a wet coal mine. |
| October 4 ... | Ruth P. (married) | 27 | (a) Very wet in rain on trunk and shoulders three months ago. (b) ? damp clothes three weeks ago. | (a) 1. Neck and back ... 2. Arms. 3. Legs. (b) 1. Spinal joints. 2. Shoulders and elbows. 3. Knees, ankles, feet. | Had rheumatic fever at 18. |
| October 27 ... | Fanny T. ... | 22 | Wet feet ... | 1. Ankles. 2. Knees. 3. Hands. | |
| November 17 ... | Mary L. (servant) | 19 | Wet feet (washing clothes)... | 1. Right knee ... 2. Left knee. 3. Wrists, &c. | Walked on damp floor and wet grass in carpet slippers. |
| November 18 ... | John S. (stableman) | 46 | Cold wind on legs when tired and perspiring. | 1. Feet ... 2. Knees, hips, and back. | Chill on 13th, no symptoms until 16th. Formerly a soldier. |
| December 7 ... | Jno. A. W. (baker) | 46 | Legs wet in rain (November 14th). | 1. Legs ... | Worked in pain until 21st. Formerly a soldier. |
| December 10 ... | Jas. S. (hawker) | 20 | Wet in rain; most wet in middle of back. | 1. Muscles of back. 2. Calf of leg. | |

unlikely) that the patients were at that moment subjects of rheumatic toxæmia; and, on the other hand, it must be admitted that when chorea arose in patients under treatment for acute rheumatism, the reason for the cerebral invasion does not usually appear in the notes—probably because it was very seldom investigated.

If hospital patients are annoyed or excited by incidents occurring in the ward or by news conveyed to them from outside, they are very often, from various motives, unwilling to admit the fact or give any information about it. If the excitement or shock happened some time before admission, they may have entirely forgotten it.

A few positive instances can, however, be adduced to show the localising power of shock or excitement in rheumatic patients, and thus to bring chorea more sharply into line with arthritis in this respect. (1) A man, aged 23, who had had chorea when 11 years old, had rheumatism in the feet in April, 1896, after a local wetting. In August, after a quarrel with a fellow-workman, chorea reappeared. (2) A boy, at the age of 11, was ill for 10 weeks with rheumatic fever. During convalescence he was hurriedly ordered to school by the official of the School Board. In a fortnight he developed chorea, which continued variably for three years. (3) A boy, aged 9, had had rheumatic fever twice. On December 1st, 1891, he was startled by a man leaping out of an ashpit in the dark and seizing his arm; chorea began next day; two or three days afterwards arthritis. For this he remained in bed a month; when he got up the chorea became severe, and the temperature rose to 102° , the cure being at length effected by sodium salicylate, chloral, and potassium bromide. (4) An iron-moulder, aged 18, in 1894 had rheumatic joints, was at home four days, then resumed work. A slight chorea followed; he continued to work, and after some weeks recovered. In October, 1895, after kneeling in wet sand he had pain in both knees; his hands soon became painful and swollen, but he kept at work, and late in January, 1896, had apparently almost recovered. On February 5th he had a violent quarrel with a relative; on February 6th choreic movements in right face, arm, and leg. 8th.—Right hand swollen and painful. 13th.—Nearly well. On this day a serious quarrel occurred with the foreman of his department. 14th.—Chorea returned in right hand and quickly spread to all his

limbs. A more precise proof of the connection between rheumatism and chorea, and of the localising power of brain excitement in the production of chorea, could scarcely be imagined than that which is supplied by this "experiment devised by Nature."

The view that the cause of chorea is the rheumatic toxine accidentally directed to the brain removes some difficulties which have at various times been propounded.

Dr. Archibald Garrod ('British Medical Journal,' January 11th, 1896, p. 70), in his suggested explanation of chorea, says that "possibly it stands to acute rheumatism in some such relation as that in which diphtherial paralysis stands to diphtheria, and is due to the action on the nervous system of a chemical product of the micro-organism. The difficulty, however, remains that chorea may be an antecedent instead of a sequel of the attack." But this is no longer a difficulty if it is granted that, the toxæmia being present, the site of its first manifestation depends entirely upon the impact of localising causes. Dr. Lees ('Clinical Journal,' July 12th, 1893, p. 162) concluded that "chorea is probably due to blood poisoning of some sort acting mainly on the cerebral cortex," and, later ('British Medical Journal,' January 11th, 1896, p. 73), he stated that he "thought that the influence of fright in the causation of chorea had been much exaggerated, and that in most cases in which it seemed to be a [? the] cause there would also be found evidence of rheumatism. No doubt; thousands of children are excited or terrified daily; few of them have chorea as a result; those few are probably already rheumatic. The two factors must be combined. If a child in the rheumatic state is exposed to chill or wetting of the limbs, arthritis will follow, but if to a mental (cerebral) shock, chorea. In the latter case the injured part is the brain; the impressions on the sensorium cause violent excitations in every cell or neuron of the motor areas; the shock must, indeed, radiate to every one of the brain-cells; the sensori-motor areas receive the equivalent of a real blow. And as in the limbs injured by a blow and a sprain respectively the rheumatic inflammation appeared first in them, so in the cases of chorea the rheumatic disorder began in the injured brain. In the whole series of cases of rheumatic fever and of chorea which have been investigated there is no instance in which chorea has been the first result of chill, and none in which arthritis has been the first result of fright.

Dr. STEPHEN MACKENZIE observed that the stage which the work done on rheumatism in the past had reached had been largely statistical, *i.e.*, by the collection of large series of cases brought together in order to prove certain points. By this means many important facts had been fairly well established. The time had come for them to make detailed enquiries into particular cases whereby he suggested they would learn more of the essential features and circumstances of rheumatism. This had been done with conspicuous success by Dr. Cheadle in studying the life history of patients suffering from rheumatism, and the results had been embodied in his admirable work on 'Rheumatism in Childhood.' He there showed the sequence of events in the lives of individual cases. He showed that the ordinary conception of rheumatism was an erroneous one in respect of the disease as it occurred in childhood, for in children it differed in many important respects from the disease as met with in adults. Unfortunately, for the purposes of discussion, Dr. Churton's paper entered into such minute detail that it was out of the question for anyone to deal with it adequately off hand. He had gathered, however, that he considered it possible to establish the existence of a localising factor in cases of rheumatism. This of course was what one would *a priori* have expected, and it had indeed been foreshadowed by most writers on the subject. It was, however, difficult, as he had observed, to get circumstantial evidence to show what effect the immediate antecedents had had in a particular case in determining the localisation of the lesions. Every one, he supposed, was prepared to admit that there must be a predisposing and a localising factor, although it might not be possible at present to decide what they were. If they took the broadest view of rheumatism, which would include general arthritis with fever and sweats, inflammations of the serous membranes, tonsillitis, and chorea, they must perforce admit that there must be circumstances which determine in each case the incidence of the disease. The author had given them valuable evidence on this point, especially in respect of the affection of the joints and chorea, and had shown that there were local determining causes at work in each set of cases. If the histories of the cases could be made still more complete no doubt this evidence would be even more pronounced. The author had brought out the fact that in a large proportion of the cases the effect of chill had been to determine the disease in the joints, and especially in the joints most exposed. In the case of chorea, which many of them regarded as being equally typical of rheumatism as arthritis, the evidence of emotion, fright, shock, &c., had been shown to be present, and it was evident that there must be some special reason for the disease attacking the brain and not the joints. Various hypotheses had been put forward to explain this incidence, such as an unstable condition of the cells in the motor areas of the cortex at a time when the full term of development had not been reached. Another factor in the localisation of the lesions in rheumatism, upon which the author had not laid much stress, was age. This certainly influenced the localisation to some extent, as evidenced by the fact that in children the joints were usually little affected while other manifestations of rheumatism were common. In adults, on the other hand, the brain escaped while the joints were mostly affected. It was rare to see a typical picture of acute rheumatism in the young child, and he asked what was the determining factor in this over and above the exciting cause. Was it the wear and tear of the joints that determined the incidence of the disease in adults, or was it certain early tissue degenerations in the later ages which added

or predisposed to the influence itself, as in other joint affections—osteo arthritis and gout, for example; diseases which selected later periods of life (though to this there were exceptions)? He alluded to the basic diathesis which had been held to underlie the action of microbes, and he observed that it could hardly be denied that some persons were born with a rheumatic tendency. Whatever the hereditary factor might be, they had in age a very important factor which could not be left out of consideration. The evidence of the localising influence of injuries to the head was very striking, though this was necessarily rare. No doubt many of the subjects of rheumatism were spare, somewhat delicate, fragile, but otherwise enjoyed good health. They might, however, show signs of an unbalanced nervous system before the actual attack of chorea. It was interesting to notice how rarely Dr. Churton had found that anæmia occurred as an antecedent of rheumatism, for in only four cases was it noted as present. This was the more remarkable seeing that rheumatism was certainly one of the most anæmiating diseases. It followed that anæmia was a consequence rather than a cause of the disease. In respect of chorea preceding arthritis his experience was in favour of this sequence, and he had frequently made use of this fact to prove that chorea was just as much rheumatism as arthritis. One of the very striking facts strongly supporting the theme of the author's paper was that he had not come across a single case of chorea caused by wetting nor any case of arthritis caused by fright. This seemed to be, in a few words, a striking proof of the localising causes of chorea and arthritis. How these several causes acted they were not as yet in a position to decide, whether by a reflex mechanism similar to that which caused muscular atrophy in arthritis, where there was no structural disease in the cord or where division of the posterior roots of the nerves prevented the occurrence of artificially induced arthritis in animals, he admitted that he was unable to say. There was, however, evidence enough to show that a reflex mechanism might come into play and cause or keep up the arthritis. Possibly there was a similar mechanism which determined the arthritis in these cases. The subject selected by the author was one involving great difficulty. He had wisely left rheumatism as an unexpressed clinical condition without defining its essential nature. While it was possible to say of such and such a case that it was rheumatism, no man could say what was the cause or how that cause acted. In the fact that by studying cases in detail, working out the history in the various forms, the author had taken an important step in the right direction, and he expressed the hope that his example would be followed by others and lead to lasting results.

Dr. A. GARROD observed that the paper opened up a new part of the subject. One of the great difficulties, alluded to by the last speaker, was that in rheumatism the influence of localising causes was much less obvious than in gout. Their influence in gout was very pronounced. For instance, he had seen gouty eczema start from a place on the skin where belladonna had been applied, and he remembered a case in which washing out the ear was followed by a violent attack of gout in the pinna. It has been observed that a hemiplegic man suffered more on the hemiplegic side than on the other, and so on. He pointed out that there was a certain grouping of rheumatic lesions suggesting that one localised lesion might determine certain others. It was recognised that certain lesions went together, endocarditis with chorea and erythema with joint disease, for example; in fact, one might group the cases into two divisions, as

erythematous or fibrous. He commented on the fact that pericarditis was frequent in the worst cases of acute rheumatism, and that rheumatic hyperpyrexia and pneumonia were almost invariably associated with pericarditis. He agreed that exposure of particular joints had a very definite influence in determining the incidence of the lesions, and this had been exemplified in certain cases of unilateral lumbago. He was also disposed to lay more stress upon injury as a localising cause than the author had done, and he recalled one case in which the affection was certainly determined by a previous strain. He insisted on the fact that chorea was an emotional disease, and argued that the emotional outbreak which was regarded as a cause might in some instances be only a manifestation of an already existing condition, and he instanced a case in which the attack of chorea was attributed to a fright in which, on close examination, it was made clear that the awkwardness of movement had been noticed at least two hours before the alleged fright. That showed how careful one ought to be in obtaining the history in these cases, for a choreic child might be frightened by an incident which would not have affected an ordinary person at all. The fact that chorea often preceded other manifestations did not exclude the hypothesis that chorea might be due to a rheumatic toxin, because a child might have rheumatism for a long time without its being suspected. He pointed out that in chorea they had a nervous disease running a definite course quite unlike most nervous diseases with which they were acquainted, and the symptomatology was much more like diphtheritic paralysis or tetanus, disorders due to the action of the toxins. He added that so far the existence of a microbe of acute rheumatism had not advanced beyond the stage of hypothesis.

SIR DYCE DUCKWORTH (in a letter) said:—To my mind an attack of chorea is an attack of rheumatism, and I constantly teach that chorea is one of its manifestations, "one of the rheumatisms." We have assuredly learned that the old conception of rheumatism as a disorder mainly affecting joints, fibrous and fibro-serous structures, is much too limited. The cardiac lesions of chorea are those of rheumatism. No pathologist presumes to differentiate them in the dead-house, and no clinician can point out differences during life or in their later evolution during life. The clinical features of chorea indicate that the peccant matter of rheumatism has alighted on the cerebral cortex, involving the motor centres for the limbs, face, and tongue, also, sometimes, the centres for speech, inducing more or less aphasia. The occurrence of intellectual defects, which are not uncommon, point also in this direction. A rheumatic taint or predisposition underlies *all* cases of chorea. The determining factor of an attack is of the nature of shock, strain, or profound emotional disturbance. The brain and nervous system in young, rheumatically disposed persons is particularly sensitive and vulnerable, unstable. The cortical lesions of chorea or "rheumatism of the brain," are commonly recoverable, but in fatal cases changes are met with in this portion of the brain, affecting the deep, cortical layer, and comprising swelling of the larger pyramidal nerve-cells. They are inflammatory in nature. My own inquiries into the personal and family history of cases under my care show, in a decade of hospital practice, 70 examples, with a percentage of rheumatic proclivity of 78·5. Considering the difficulty of such an inquiry, I feel justified by other facts in assuming a much larger rheumatic influence as the basis of all cases, and, by carrying on observations over a long period into the future history of choreic patients, I feel further fortified in the view of the rheumatic

nature of this malady. All these views were set forth at length in a paper read at the Eleventh International Medical Congress at Rome in 1894 (*vide* 'Lancet,' April 7th, 1894, p. 891), and to which I would venture to refer any who take interest in the pathogeny of chorea.

Dr. C. W. CHAPMAN recalled the case of a man, in Guy's Hospital, who had been garotted, who developed a violent attack of chorea, which was treated by the administration of chloroform, and from which he subsequently died.

Dr. ROUTH discussed the alteration in the incidence of diseases since the time when he was a student, pointing out that rheumatism was now not so common as formerly, but that they saw more of gout, which in his student days was rarely met. In the same way typhus had given place to typhoid, and so on. He recalled the views held by the late Sir B. W. Richardson—that rheumatism and gout were due to a poisonous acid which circulated in the blood; the poison in gout being, he thought, uric acid, and in rheumatism, lactic acid. The question arose, What was the cause of this excess of acidity? Did the *chill* or *wetting* produce it, or was it not the acid pre-existent in the patients which only made them capable of exciting the rheumatism? Thousands of persons had no rheumatism, spite of all kinds of chills and wettings. Again, in the cases of chorea, was examination of urine or heart always made by which we could detect rheumatic disease in the system, although not complained of by the patient? How was it that electricity removed sometimes every symptom of lumbago, and that silk underclothing, which, by friction on the body, produced electricity, precluded its recurrence? Was it an electric phenomenon in the atmosphere? That chills and wettings and heredity would produce attacks of both rheumatism and gout, he was sure; but they also were often prevented by silk vestures. As in other epidemics some other contingent cause must work synchronously with chill, wettings, or nervous shocks to produce rheumatism.

Dr. FLETCHER LITTLE said there was the difficulty of ascertaining whether the assigned causes were correct. He recalled the cases of two twin sisters who when subjected to adverse conditions developed, one neurasthenia and the other arthritis, and he raised the question why the same conditions determined such very different affections in two persons belonging to the same family. He mentioned that at the Temperance Hospital he had noticed a kind of epidemics of chorea, and he asked how this could be accounted for. He mentioned also that while last year of 40 or 50 scarlet-fever patients at Harrow all recovered and none developed marked arthritis, this year the only patient that had it was very bad, and was likely to die. He asked what circumstances might be supposed to influence scarlet fever so as to bring about this preponderance of rheumatic manifestations? With respect to the lumbago, he related that he had found that when sitting with one side exposed to a window which looked east he had the pain on the exposed side, and on shifting his table the pain also shifted to the other side. In conclusion he raised the question why the endocardium was so frequently attacked.

Dr. CHURTON, in replying, mentioned a case in which a blow upon the left side of the head of a boy had been followed by chorea in the right arm. He referred also to the effect of strain or injury in localising an attack of gout. A shock or fright radiated from the visual or auditory areas by the association fibres throughout the whole brain; hence anæsthesia, motor effects, and mental effects (prefrontal) might be produced. A case had been recorded in which a schoolboy, absent

without leave, fell into a pond, and, in addition to this shock, being afraid to go home, passed the whole day in his wet clothes, being thus subjected to combined fright and chill. Next day he had well marked chorea. It was very probable that if children in whom chorea appeared as a result of emotional excitation of the brain had been chilled or injured in the limbs instead of suffering that emotion, they would have developed rheumatic arthritis instead of chorea. The rheumatic poison was probably developed by ferments or micro-organisms in the gastro-intestinal tract ; the locus of its manifestation was due to accident. Rheumatic patients usually became anæmic ; his impression was that choreic children were anæmic, pale-lipped ; endocarditis sometimes occurred without preceding or associated arthritis ; probably anæmia might similarly occur, and be an (hitherto unrecognised) evidence of rheumatic toxæmia ; if this could be established the occurrence of chorea without (ordinary) signs of rheumatism would be intelligible.

November 22nd, 1897.

CASE OF PYOPNEUMOTHORAX OF SEVERAL MONTHS' DURATION CURED BY FREE INCISION : WITH SOME REMARKS ON THE SURGICAL TREATMENT OF PNEUMOTHORAX.

By SAMUEL WEST, M.D., F.R.C.P.

I WILL in the first place relate the history of the case to which I desire to call attention, and afterwards make some remarks on the debatable points which are raised by it.

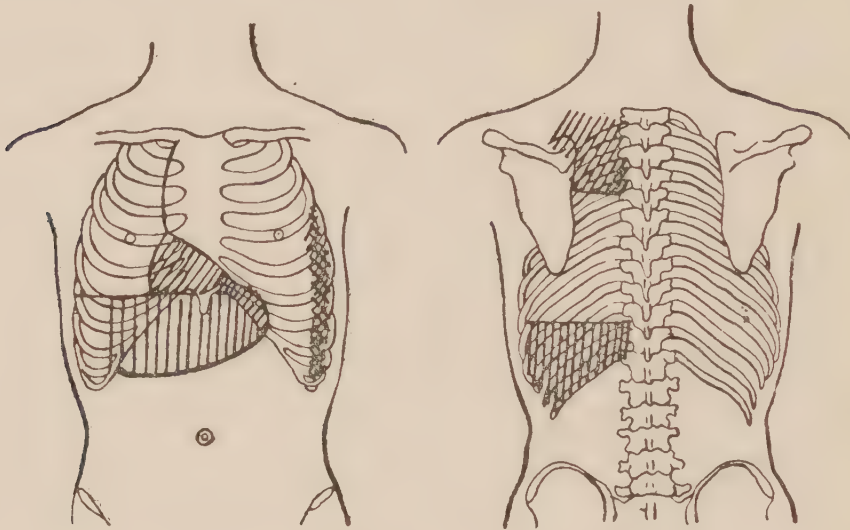
W. T., aged 34, a blacksmith, was admitted to the hospital under my care on March 8th, 1897, complaining of cough and difficulty of breathing. He proved to have a pyopneumothorax of the left side.

His previous history was this : On November 2nd, 1896, he was taken suddenly ill while at work, with sharp pain in his left side, which was unbearable on coughing. He went home to bed, and stayed there for 11 weeks. He was told that he had pneumonia and pleurisy. Shortly after Christmas time, soon after getting up, he had an attack of violent dyspnœa, during which he became unconscious for a short time. He had had two slighter attacks since, and had been very short of breath on any exertion. For the last six weeks the patient had noticed a peculiar splashing sound in his chest as he walked, and he had shooting pains in different parts of the left side of the chest. His cough during this time had been frequent and paroxysmal. There had been much dark, thick expectoration but no hæmoptysis.

On January 4th the patient went to the Convalescent Home at

Sandgate, where he remained five weeks, and while he was there the doctor drew off a small quantity of clear fluid from his chest.

Returning from Sandgate, the patient went to St. Bartholomew's Hospital, where he was shortly after seen by me and recommended for admission. During his illness he had lost two stone in weight, but he lost three during the first part of his illness, and regained one subsequently at Sandgate. There was nothing in the patient's previous history or in the family history which had any bearing upon the case. The patient looked pale and ill, and had evidently lost a good deal of flesh. He was disturbed frequently by paroxysms of coughing, which were occasionally very severe. He presented the signs of left-sided pneumothorax, the cardiac dulness reaching as far as 2 inches to the left of the sternum.



The diagram shows the limit of hyper-resonance as the patient lay upon the back ; in front the voice and breath sounds were amphoric in character, and the bell sound audible over the whole hyper-resonant area ; behind, the breath sounds were absent at the base and altered in character at the apex, and the bell sound stopped at the limits shown upon the diagram ; above and below between the two lines the bell sound and amphoric breathing and voice sounds were present, as in front. Succussion was easily elicited. The lung, it was thought, was adherent at the apex behind. The hole in the lung, in spite of the amphoric breathing, was evidently closed. As a cyrtometer-tracing showed, the affected side was rather smaller than the opposite one.

March 16th : A needle was inserted into the seventh intercostal space behind in the mid-axillary line and sero-purulent fluid obtained.

The patient had a pneumothorax with sero-purulent effusion. He was very ill and quite incapacitated for work. He had been invalided for some months, and was getting steadily worse.

The question was : How was he to be treated ? The fluid might be removed by paracentesis, but experience of similar cases was not encouraging. He could be left alone, but it was

pretty evident what this would end in, and that to do nothing was tantamount to permitting the man slowly to die. Free incision seemed a better alternative than this, for it would give the patient, at the worst, a chance, even though so much time had been already lost. My own opinion was in favour of the treatment of pyopneumothorax on surgical principles by incision, and I did not take the unfavourable view of the prognosis after incision which was usually taken. Finally, if the side was to be opened at all, the sooner it was opened the better.

Accordingly, after giving the patient the advantage of a few days' rest and feeding in the hospital, I decided to have the side freely opened.

On March 30th a simple incision was made into the side in the sixth space in the posterior axillary line : a large amount of sero-purulent fluid escaped, probably about four pints. An examination with the probe immediately after the operation was completed showed that the lung was not more than an inch from the chest walls everywhere, so that it had expanded directly after the operation. Directly the side was opened the patient began to cough, and coughed violently. This might have been due to the irritation of the tube which was inserted, but was more probably owing to the expansion of the lung. The patient took chloroform well, and bore the operation satisfactorily. A few minims of laudanum were given on the tongue to check the cough.

March 31st : The patient had been comfortable after the operation, except that once or twice during the night he seemed a little faint, and required some brandy. The next morning, when the wound was dressed, air was found to enter the whole of the left lung, and friction sounds were audible not far from the seat of the incision. The patient complained of a good deal of pain in the left side, which was probably connected with this friction.

The discharge from the side was very free, so that for the first few days the patient had to be dressed twice daily. After this the discharge decreased greatly, and it was sufficient to dress the side once daily.

On April 7th the discharge became very offensive, some small pieces of sloughing tissue were removed from just inside the wound, and it was thought that a spot of bare bone was felt by the probe. The side was washed out with a weak solution of iodine and with boracic acid ; the discharge rapidly lost its offensive smell, and the spot where it was thought the bone was bare healed over.

From this time the discharge rapidly diminished in quantity, and on April 25th it was about 2 or 3 ounces daily, and it continued to this amount for a good long time. Examination with the probe showed that the lung was in contact with the chest walls all round the incision, but that the track in which the tube lay extended for a distance of about 5 or 6 inches straight into the chest in the direction of the spine.

On May 19th the patient began to complain of a good deal of pain in the chest, sometimes round the wound and sometimes a little deeper, but

no cause for it could be ascertained. The sinus had, up to the present time, been regularly washed out with carbolic acid solution. This was now stopped, and the pain was a little relieved, but as the pain continued, various experiments were tried with the tube, as it was thought to be connected with some irritation the tube produced. The tube was shortened, but the pain was not much relieved.

On June 16th, on probing, a tender spot was found far back, and it seemed to me that at this spot the tube pressed on an intercostal nerve, and thus caused the pain. The tube was removed, and a longer one of smaller diameter inserted, and from this time the patient suffered no more pain. On June 25th it was stated that the patient felt very much better; he had been up some little time, and he managed to go up and down stairs moderately well; the amount of discharge was still about the same, but not more than could be accounted for by the irritation of the track of the tube. On July 8th he had some pain in the leg, which proved to be a little periostitis. This was rapidly cured with belladonna and glycerine, and gave no further trouble. The discharge was now not more than about an ounce in the 24 hours; the patient was up daily, was gaining strength and weight.

On October 12th the patient's weight was 10 stone 11 lbs.; the discharge was very slight, but, as it did not completely cease, the sinus was injected with creosote dissolved in olive oil (25 per cent. solution). Although this caused a good deal of smarting, it seemed to do a great deal of good. By the end of the month the tube had been considerably shortened, and by November 1st the tube was out, and the wound completely healed. On November 2nd I made the following note:—"The patient is in excellent health, looks fat and well, and says he never felt better in his life, and feels quite able to go back to his work, that of a blacksmith." The side was a good deal contracted, but no very large amount of deformity had been produced. The vocal vibrations and vocal resonance were felt right down to the base behind. The percussion, at the lower parts especially, was still somewhat impaired; the breathing was audible over the whole side, though of course not as loud as on the opposite. The temperature was normal. The patient had gained $2\frac{1}{2}$ lbs. during the last week.

As regards the temperature, all that need be said is this: that at the time of admission and up to the date of operation the temperature was normal, or rather somewhat subnormal, and remained subnormal for the first few days after the operation; it then began slowly to rise, and remained moderately hectic, varying daily from about 102° to 99.5° for about a week or 10 days, after which it became subnormal again and continued so, with few occasional rises for a day or two, throughout. The patient may be regarded now as completely cured.

REMARKS.

Here is a case of pneumothorax of several months' duration, with a purulent effusion. The patient had been under the care, shortly before I saw him, of an eminent authority, who had dismissed him as incurable; yet, as the result has shown, the case was not incurable when treated on general principles.

We may ask, Why are such cases as these regarded as incurable?

Why are they left alone—that is to say, left to die, without the chance of recovering being given them which surgical interference might provide? The answer is, because of certain theories which are commonly accepted and frequently acted on, and which I believe to be erroneous.

1. That where the lung has been collapsed and compressed for some time, whether by air or fluid, it will form adhesions and be bound down, and be thus incapable of expanding again, so that if the side be opened a large cavity will be left, which cannot contract, and can only heal by the falling in of the ribs on one side, and by granulating up on the other. If this theory were true, of course operation would be undesirable, for there would be a chronic cavity left which could not close, and the patient would suffer from the results of prolonged suppuration, and die probably of exhaustion or of amyloid disease, and this is what is stated commonly to occur.

Now, is it correct to assume that when the lung has been compressed in the way I have described, it must necessarily be bound down and be incapable of expansion? Can we make this a general statement or general rule of practice, and act upon it? Certainly not. Of course, it may be admitted at once that in many cases where patients have died after long-standing empyemata, or pyopneumothorax, or sometimes even with serous effusion, the lung has been found tightly bound down by dense adhesions, and therefore would have been incapable of expanding and healing; but it must be remembered that these cases have been left alone with nothing done, and it does not follow that if some operation had been performed in early times the lung would have been bound down in that way.

We must also admit that there are cases in which very shortly after an inflammation of the pleura has taken place—as, for instance, with a common serous pleurisy—the lung has contracted adhesions enough to considerably hamper its expansion. These cases, however, again, are quite exceptional, and we have daily evidence of the fact that the lung may be collapsed for a considerable period of time by serous effusion, and yet not contract these adhesions. Though the plea that these adhesions were likely to form was used as an argument some years ago in favour of the early performance of paracentesis in serous effusion, experience has shown that this fear is not well grounded.

That the lung is not bound down, even after a very considerable lapse of time, both in serous and purulent effusions, I will quote three or four cases to prove.

A young man, aged about 24, had been discharged from the army in July because he had a discharging empyema, which had made its exit through the side and also through the lung, so that he was expectorating about a pint of pus daily, and losing about a similar amount daily through the opening in the side. He came under my observation six months later, and as he was in good general health I decided to perform an operation upon him before his health began to fail. Accordingly, a free counter-opening was made low down in the posterior part of the axilla, so as to provide free drainage.

Within about a week from this time all expectoration through the lung had ceased, and within five weeks from the time of operation the wounds were closed and healed. The lung had expanded well, and breathing was audible over the whole side. The patient came to see me for some time after that, and I know that he remained in excellent health for some months as long as he was under my observation, and I have no reason to believe that his health suffered afterwards.

Three years ago I read to this Society an account of the case of a lady who was suffering from a large right-sided serous effusion which had been deliberately, and after consultation, left alone for a period of 18 months without even once being tapped. I tried paracentesis several times, and when this failed I ultimately decided to have the side laid freely open and the case treated as if it had been one of empyema. Paracentesis had shown me that the lung was not bound down as I had at first had reason to believe, for after each paracentesis it came out into contact with the ribs. I had hoped, however, after the repeated paracenteses, that the lung would have formed adhesions with the costal pleura, but to my surprise, when the side was opened, no adhesions were present, and the lung collapsed completely. However, this made no difference in the ultimate result, for the lung rapidly re-expanded and came into contact with the chest walls, and formed adhesions there. Soon nothing was left but the track in which the tube lay, and ultimately this also healed.

This case shows, first, that the lung in a case of serous effusion may be collapsed for at least 18 months, and still be capable of

ready re-expansion; and, secondly, that even after repeated paracentesis no adhesion need necessarily take place between the two layers of the pleura.

I have recently had another case of the same kind in a man who had been allowed to have a serous effusion not operated upon for about 12 months before he came under my observation. With him I tried also the effect of repeated paracenteses, but, encouraged by the experience of the previous case, after a few paracenteses I decided to have the side opened. Accordingly the side was opened, the fluid let out, and a drainage tube inserted. Within a week from the time of operation the lung was in contact with the chest walls over the whole side, and nothing was left except the long sinus in which the tube lay.

As I propose shortly to bring this case before one of the Societies, I need not describe it further here.

In the case which is the subject of this paper, again, although the lung had been compressed for some months, within a week after the incision had been made in the side the lung was in contact with the chest wall over the whole side, and the pleural cavity closed except for the sinus in which the tube lay.

We have, therefore, a series of cases: one of empyema, two of serous effusion, and one of pneumothorax, in which, in spite of the lung having been compressed by effusion for a considerable period of time, it was not bound down, but was capable of ready re-expansion when placed in a position to expand.

These are extreme cases, and although, on the other hand, it must be admitted that the lung may form adhesions which may bind it down quite early in a case of pleurisy, still there is no evidence that this always occurs, or even that it is the general rule; on the contrary, the evidence all points the other way. If this theory be unsound, the practice based upon it will be wrong.

2. A second theory, which is commonly stated in text-books and is very widely accepted, and which has been often used as an argument against surgical interference, is that the compression of the lung by effusion or air, as the case may be, checks the progress of tubercle in it; so that, though the presence of effusion or air in the pleura is an evil, it is outweighed by the advantage of checking the development of tubercle in the lung, and therefore no operation should be performed.

This again is, I believe, a completely erroneous theory, though

the statement is commonly made and has many distinguished names to support it; still I do not know that it rests upon any conclusive evidence, but remains a matter of opinion only; indeed, what evidence there is leads to the opposite conclusion. It is not the case that the compression and collapse of the lung does necessarily check the development of tubercle in that lung, for tubercles of recent formation may be found in the lung which is collapsed, and of date, as far as can be judged, subsequent to the time when the lung became collapsed. Certainly the collapse of one lung is not infrequently followed by the rapid development of tubercle in the other.

The same theory was used at one time as an argument against the performance of paracentesis for serous effusion, and no doubt it was under the influence of this theory that the two cases I have recorded were deliberately not interfered with; but as a matter of fact at the present day this theory does not really affect our practice at all in respect of pleural effusions. They are tapped, and I believe rightly tapped, without any consideration as to the effect the removal of the fluid may have upon tubercle in either the one lung or the other.

In the case of empyema again we have almost forgotten that such a theory ever had any influence at all. No one nowadays thinks of leaving an empyema alone because of some possible effect it might have upon tubercle in the lung.

I maintain that these theories should have no more weight in relation to pneumothorax and its treatment than they have in relation to the treatment of empyema or of serous effusion.

3. Another argument that is used as against the treatment of pneumothorax by free incision, is that experience shows that the results are unsatisfactory. "Leave pyopneumothorax alone because the patient will die any way, and operation will only accelerate that result," used to be the teaching of not many years ago; and indeed on this point Fagge, who can hardly even yet be regarded as antiquated, was very precise.

"Operate only when driven to it," was another form the advice sometimes took. What would be the result upon our statistics if the same were applied to empyema, and if we never opened a side until the empyema was pointing, and never touched it even then if the empyema by good luck would discharge through the lungs?

A question of this kind must be settled by experience, and we cannot take the results of some years ago as a guide to practice at the present day in pneumothorax any more than in empyema.

In this respect, namely, the operative treatment of pneumothorax, we have to make our own experience over again; we cannot be guided by the experience of many years ago; especially when we remember that the statistics are based upon the cases of pyopneumothorax which were never operated upon unless operation became absolutely imperative.

I think I have shown, therefore, that there is no valid theoretical reasons why sero-purulent and purulent effusions in pneumothorax should be treated in any different way from sero-purulent or purulent pleurisies, and that the presence of air should not make any material difference.

Of course it is quite true that in the majority of cases of spontaneous pneumothorax the cause is a tuberculous cavity near the surface of the lung; but these ruptures frequently heal, and there is no reason why, when the rupture has firmly healed, the lung should not come into contact with the chest again, and the condition of the patient return to that which existed before the pneumothorax occurred.

Physicians have been in the past, it is true, too much inclined to leave things alone, though I do not think we can say the same of the present day, and it will be something in pneumothorax if we can brush aside the erroneous theories which have hitherto given an excuse for avoiding surgical interference.

If pneumothorax may be treated by incision when necessary, it next remains to consider when it becomes necessary.

1. *During the Early Stage.*—It is in the early stages of pneumothorax that the risk to life is greatest, and it becomes less and less as time goes on. This is due to the sudden embarrassment of the respiration and circulation, caused by the sudden collapse of one lung and the congestion of the other. If life is prolonged and time is given, the lungs and heart adjust themselves to the altered conditions and the urgent symptoms pass off.

To relieve these urgent symptoms in the early stage, paracentesis is often necessary, and may have to be repeated. If, after paracentesis, the conditions again became urgent in a very short space of time, so that paracentesis has to be repeated at short

intervals, it may be wise to consider well whether the side should not be incised. This would have the effect of giving a permanent vent to the air, and relieving all pressure symptoms; but it would have two obvious disadvantages: first, the lung, being partly expanded, would be in a less satisfactory condition for the perforation to heal soundly; and, secondly, an incision would almost certainly end in this case, as in others, with the production of an empyema. It is wise, for these reasons, to entirely avoid, if possible, a free incision in the early stage of pneumothorax, or, at any rate, postpone it as long as possible. All the relief that is requisite can usually be given by means of repeated paracentesis. However, if paracentesis should fail, I should not myself hesitate, even in the early stage, to lay the side open; and I should be inclined to do this in preference to using any form of valve tube. The only tube of this kind which I should be inclined, under any circumstances, to employ would be a fine trocar connected with a small india-rubber tube extending, say, to the floor from the bed, and opening under water; in this way a fluid valve would be formed which would permit the escape of the air from the pleura, but not allow any air to pass back. The objection to any of these tubes is that, do what we will, in most cases the puncture suppurates, and sometimes leads to an opening into the pleura which might perhaps otherwise have been avoided. I should prefer in these cases repeated paracentesis, and if that failed I should be inclined to proceed to incision.

2. *During the Later Stage.*—If the early hours and days of pneumothorax pass over without symptoms of such urgency as to call for incision, the question of incision becomes one which may be considered at leisure, without hurry, and deliberately decided upon.

(a) If no fluid form, and the case remain one of simple pneumothorax, the air in time will be absorbed, and recovery be complete. This may take some days, or even two or three weeks, but in the end the air will all be absorbed. I have never seen a case of simple pneumothorax in which the air did not in the end spontaneously disappear, and that, as a rule, in not many days. It is well, as a rule, not to interfere with these cases in any way, even by paracentesis; and if, with the view of accelerating recovery, paracentesis is performed, the aspirator should not be used, but the air removed without any suction. If suction be employed, it

should be limited to a few inches of water, say 10 or 12 at the most. These cases are, however, best left alone untouched.

(b) Where serous effusion develops, so that the case is one of hydropneumothorax, it should be treated on the general lines of serous effusion; paracentesis may be performed without suction, care being taken to remove the fluid rather than the air. Cases may be cured in this way by paracentesis, but sometimes they spontaneously cure, the air being absorbed and fluid taking its place. Under these circumstances the subsequent treatment becomes that of serous effusion, and it may be that where frequent paracentesis has failed to cause the disappearance of the fluid incision might become necessary, just as it does sometimes in cases of simple serous pleurisy.

(c) Where the effusion is purulent—that is to say, where we have a case of pyopneumothorax to deal with—and careful paracentesis fails to give relief, incision will become necessary. The chance of pus being spontaneously absorbed in pyopneumothorax is very much less than it is in empyema, and there it is, as a rule, small. Sooner or later incision will become necessary, and there should not be too long delay in deciding upon this operation. The indications for operation in pyopneumothorax are, I think, simply the same as those for operation in empyema, and the presence of air in these cases may, I think, be disregarded. What makes the prognosis in these cases less favourable than in ordinary cases of empyema is that in so many cases of pneumothorax tuberculous lesions in the lung are present, while they may be absent in empyema.

The indications for incision in cases of empyema are so well known that it is not necessary to refer to them here. The object of this paper is to show that there are no special reasons why the same considerations should not be applied to pneumothorax as to empyema; and I do not hesitate to say that if they are—that is, if in the future cases of pneumothorax are treated on the same general principles as govern our practice in empyema, the results will be much more favourable than they have been hitherto.

Dr. DE HAVILLAND HALL said he was much interested in the author's proposal to treat cases of pyopneumothorax in the same way as empyema, and he thought the reasons given for this course justified the author's conclusions. At the same time he suggested that the author possibly took too sanguine a view of the results that would follow, although he

admitted that he himself might on the other hand have been unduly impressed by some unfortunate cases which had come under his notice. He mentioned the case of a man who was operated upon for empyema, but the lung did not expand and two or three ribs were removed, with the result of leaving a huge cavity which the lung failed to fill. Then portions of several other ribs were taken away but the cavity remained, and the man ultimately succumbed to asthenia. This case had impressed him with the fact that the lung did not always expand. He admitted that such unfortunate cases might be quite exceptional, but their occurrence was very distressing. In private practice such a case could not but damage the reputation of the practitioner or surgeon who had charge of it. At the same time they must not be deterred from interfering by one unfavourable case. He called attention to the fact that the author had not alluded to the importance of a previous history of lung trouble in determining the propriety of operative measures. Pneumothorax occurring in a man with fairly healthy lungs might do well after operation, but he took it that even the author would not advocate an operation when the lung was known to be riddled with cavities. He related a case of pyopneumothorax with a history of extensive previous injury to the lung. One night the patient had an attack of dyspnoea, and the next day signs of pneumothorax made their appearance, followed in a few days by fluid in the chest and hectic fever. The upper half of the lung was extensively diseased, so he declined to countenance any operation, allowing the man to die. The appearances at the *post-mortem* examination fully justified his decision. He recalled an anecdote related by the late Sir Andrew Clark of a man with pyopneumothorax who used to be admitted to the hospital from time to time just to enable him to demonstrate to students the physical signs of this condition. During his absence on one occasion his house physician opened the chest and the man died. That was another example of the ill effect sometimes following operation. With the exceptions to which he had called attention he thought they would do well to follow the sound advice given by the author for the treatment of these cases.

Dr. THOROWGOOD said that not long since he had occasion to remark to his house physician, in reference to a case of empyema under their care, that it was best not to wait long in such cases but to drain the chest. In cases of pyopneumothorax it was different; empyema treated by drainage would get well, but the other rarely recovered. It was impossible to lay down any hard and fast rule for the treatment of pyopneumothorax; each case must be judged on its merits. If there was air in the chest it might be absorbed, and at any rate it was safe to wait and see, but if the symptoms became urgent, then operate at once. He was glad to see that the author had treated the suggestion of tubercle resulting from pressure as a mere fanciful idea. In years gone by it was the practice to wait long before operating in empyema, with the result that the lung was often adherent, ribs had to be removed, and ultimately the patient, as in the case referred to by Dr. Hall, sank from sheer exhaustion, with probably amyloid disease of the organs. Pus might be removed by tapping, and, if it recurred, the chest should be drained. He referred to the case of a fireman on a steamer who came into Victoria Park Hospital with empyema. The chest was incised and a tube inserted, and within six weeks the man left in order to see his mother, promising to return. He felt so well, however, that he returned to work instead of coming back to the hospital. That was the result of early operation.

The result was apt to be very different when the operation by drainage was delayed.

Mr. MARMADUKE SHEILD referred to a case which he had seen with Dr. Ewart some months ago in which he had been called upon to operate on a young man who not only had pyopneumothorax but also gangrene of the lung as evidenced by the fœtor of the breath. He was practically moribund ; in fact, he never remembered to have operated on a person so near death. He made a rapid incision, and this was followed by steady recovery. In another case, of the nature whereof he was not quite sure, the man had had for a long time symptoms of chest mischief. It was diagnosed as empyema, though the chest was slightly resonant. On opening the chest there was a large escape of gas. The symptoms had existed six months before he had been called in, and the lungs were quite bound down. He had declined to remove any ribs, foreseeing what would happen. He pointed out that Estlander's operation for old standing cases gave far from favourable results. There were two points to be borne in mind—first the question of anæsthesia. The mere giving an anæsthetic to such a patient entailed considerable risk. When used, the patient should be placed in the position in which he breathed most comfortably so as to give the healthy lung free play. The quantity of anæsthetic should be small, chloroform being preferred. Then the incision should be made rapidly, and by making a "trap door" incision it was possible to remove portions of several ribs expeditiously, a point of great importance. He preferred not to apply any fixed dressing to the chest in such cases, merely applying a large pad of wood wool and iodoform wool to absorb the discharge for the first day or two. This could be frequently changed without moving the patient. The surgery of these cases was largely influenced by the length of time the disease had existed, for if there was much delay the lung was apt to become firmly adherent. With reference to surgical cases of pneumothorax, he said these stood on quite a different footing, for the air in such cases might be quickly and perfectly absorbed without interference, so that the two sets of cases were not on a par in this respect.

Dr. BOWLES said, in reference to operative procedures, he would like to emphasise the great importance of considering the effects of position in cases of pyo-pneumothorax, and he referred to two cases reported in 'The Lancet' (April, 1897), in both of which cyanosis and dyspnœa ensued immediately on turning the patient, for the convenience of the surgeon, on to the sound side ; pus poured from the mouth and bubbling respiration was heard. The patients were turned on to their back and artificial respiration was employed, but without relief. Death followed in both cases, the trachea and bronchial tubes having been choked with pus which had gravitated into the sound lung. Of course, the supine position could have no effect in relieving the lungs of the pus, and the introduction of air by the Silvester method, in that position, would only drive the liquid contents further into the bronchial tubes.

Dr. WEST, in reply, said he did not think there was any necessity for making much ado about the position in the cases to which he had alluded, viz., pneumothorax which had existed for some time, for urgent symptoms were usually not present. All that was necessary was to make a simple incision in the side as the patient lay in bed, and this hardly merited being called an operation. He certainly would not advise removal of rib in cases of pneumothorax, for necrosis of the rib was one of the most serious complications of pneumothorax. He agreed that the less

anæsthetic that was given the better. Alluding to Sir Andrew Clark's case he observed that his sympathies were entirely with the junior physician, for the case had probably been left too long untreated. He referred in his paper to a special group of cases in which the lung had been collapsed for some time. There was much evidence to show that in many cases, where one might expect *a priori* that the lung would not expand it did so notwithstanding; it followed that we ought not to refrain from operation merely on that assumption. It was usually tolerably easy to determine by paracentesis whether the lung would expand, but at the same time it must not be forgotten that the use of the aspirator in these cases was not without risk in unskilled hands and it was an instrument that was more safely dispensed with, if possible, in pneumothorax.

THE MECHANO-THERAPY OF MOVABLE KIDNEY.

By A. SYMONS ECCLES, M.B.

SINCE the year 1892 21 cases of floating kidney with local pain and tenderness have come under my observation and treatment. Two cases prior to these have already been described in a previous paper,* and notes of other five have been reported.†

Of the 21 cases 16 have been treated by the "rest cure" for periods varying from 14 days to eight weeks, and of these eight are here recorded in detail, seven were lost sight of within four months of treatment, one was a complete failure, and is referred to later on as the only case in which immediate benefit did not follow. Five were greatly improved by abdominal massage, exercises, and the application of a belt and pad, and one of these has been free from all discomfort for five years, and another for two years, whereas both had before suffered acutely from pain and general discomfort at intervals for prolonged periods. The results obtained in these 21 cases are for the most part so satisfactory that they bear favourable comparison with records of those treated by operation, and in view of cases which have occurred there is something left in favour of employing milder means for the relief of nephroptosis than surgical interference involving either nephrorrhaphy or nephrectomy. Early diagnosis, reposition, and the maintenance of the organ in its normal position by methods which also conduce to the improvement of general

* 'Lancet,' 1891, vol. xi, p. 118.

† "The Relationship between Disorders of Digestion and Neurasthenia," 'Proc. Roy. Med. Chir. Soc.,' February 27th, 1894.

health would appear to go far towards the relief of the patient from the necessity of having the kidney stitched into its place or removed from the body as the advocates of early operation advise. At any rate, sufferers from floating kidney should first be subjected to treatment by rest and massage, followed by exercises, before they are exposed to risks which exist, however small they may be rendered by the skill of the operator. No harm arises from the delay which may fairly be entailed by the "rest cure," and if any local surgery should afterwards prove to be necessary because of failure to relieve pain by the means here advocated, the sufferer will be rather better than worse able to undergo operation.

CASE 1.—Mr. E., aged 34, sent to me by Dr. Bright, of Cannes, was admitted for treatment in March, 1892, complaining of constant dyspepsia, vague, sometimes severe abdominal pains, flatulent distension, constipation, backache, especially in the lumbar region, loss of flesh and strength, occipital headache, nervous irritability, exhaustion, and indecision. Any attempt at intellectual work or business produced headache, "the memory goes and thought is impossible." Latterly he had become very emotional and wept frequently.

There had been no serious illnesses until this breakdown a few months ago, when he was compelled to relinquish his business from inability to concentrate attention on his work; but since boyhood he had been more or less subject to sudden attacks of indigestion and aching all over the abdomen. Height, 5 feet $10\frac{1}{2}$; unclothed weight, 9 st. $11\frac{1}{2}$ lbs. The whole of the body was thin, with little, if any, subcutaneous fat. No physical signs of disease in the lungs or heart. The abdomen was concave, there was no tenderness, and nothing to be felt or recognised, save some flatulent distension of the stomach, which rose to the level of the fourth left rib, and extended outward to the left beyond the mammary line, the lower border being on a level with the lowermost curve of the eighth rib. The urine was pale, sp. gr. 1015; no albumen nor sugar.

Ten days after admission the patient complained of pain across the umbilical region and in the lumbar region. The abdomen was very closely examined, and the right kidney was found lying transversely across the right lumbar region on a level with the navel, from which its proximal end was two fingers' breadth distant. The patient felt the sense of resistance, and was much alarmed lest he should have "a tumour." The organ slipped away in the phantom-like fashion so often associated with its wanderings, and could be felt gliding over the left hand pressed firmly behind against the muscles of the back, between the crest of the ilium and the floating ribs on the right side. A pad and bandage were applied and readjusted thrice daily. Massage of the abdomen was administered three times a day, and sometimes at night if the patient was sleepless and complaining of flatulent distension, which at first was a troublesome feature in the case.

Steadily, however, the dyspeptic symptoms gave way, and regular relief from the bowels was obtained without drugs after the first fortnight. Weakness and pain in the back were often complained of during the first three weeks, but the weight steadily increased, and at the end

of the month the gain amounted to $17\frac{1}{2}$ lbs. By this time the patient had lost all headache and was very cheerful, complaining only of slight tiredness and pain in the back after the morning toilet. At the end of six weeks' treatment the weight was 11 st. 5 lbs., being a net gain of $21\frac{1}{2}$ lbs., and the patient left for the Continent.

At the end of September, 1892, I saw him again, when he felt better than for years previously. The right kidney could be felt in its normal situation, and he had retained the gain in weight. In October, 1892, he had a severe attack of dyspepsia, lasting for three weeks, which reduced his weight to 10 st. 12 lbs.; very imprudent irregularity of meals and carelessness in diet initiated the indigestion. The kidney was still apparently always in its proper place. After three weeks' treatment by rest, massage, and diet, the weight rose to 11 st. 4 lbs., and he went away again quite well.

In 1893, towards the latter end of the year, having suffered from gradually increasing dyspepsia since July, he consulted Professor Nothnagel, whose report was as follows: "*Enteroptosis ren mobilis dexter, atonia ventriculi et intestinorum, symptomata nervosa hinc dependentia*," and his advice was to employ mechanotherapy, massage of the abdomen, hydrotherapy, and diet. The patient wrote: "Nothnagel says, however, that the beginning of my trouble is my kidney being out of place, and that all my nervous troubles are the result." An attempt to carry out treatment at a health resort on the Continent was not successful, and the patient again came under treatment, but was compelled to relinquish it after three weeks owing to the serious illness of his father, and his weight was only 10 st. 6 lbs. when he left.

During 1894 he had much domestic and business worry which prevented him from making great progress; but the dyspepsia was much less while employing exercises and wearing an abdominal belt. In 1895 he was very well in bodily health, playing golf and travelling on the Continent till October, when he came under my close supervision till January, 1896, and was free from all discomfort save when agitated by domestic troubles, which upset the digestion at times. I had frequent opportunities of examining the abdomen, and although the right kidney was more mobile than usual, I never found it out of place. The only treatment adopted from October, 1895, to January, 1896, was regularity of meals, exercises, massage of the abdomen when the nervous dyspepsia came on, and an abdominal belt. Since that time the patient has been well, he has gained 10 lbs. in weight, has undertaken a most arduous and responsible post, which he still fills with success, and in every letter of a regular correspondence up to October, 1897, he makes no complaint of physical discomfort.

In this case the opinion of so great an authority as Nothnagel confirms my belief that the initial trouble was nephroptosis, whence arose the dyspeptic and nervous derangements. So long as the patient maintained the amount of packing material gained in his first period of treatment, he was well; but under the conditions of an unsettled life on the Continent, with improper food and great anxieties, his digestion became impaired, he lost a great deal of the flesh and fat which had been gained, the muscular walls of the abdomen lost tone, and the usual support offered by them to the viscera was in a measure lost, so that the right kidney again became movable until means were adopted for the replenishment of both fat and muscle.

This case well illustrates the necessity for maintaining the general

nutrition of the body, and particularly the muscular tone of the abdominal walls, without which it is impossible to hope for improvement in the nervous and digestive derangements acting and reacting on each other.

CASE 2.—Mrs. A., aged 37, was admitted in April, 1893. She had been married 14 years, was the mother of eight children, and had been fairly well in health till four years ago, when she was much prostrated after confinement, with frequent headaches, dragging pains in the back and loins, occasional nausea, and rapid action of the heart, not always after exertion. Gradually she had been losing health, and “now finds any slight exertion makes her feel quite exhausted.” An hour’s drive in “a carriage is quite enough to produce fatigue which lasts all day and results in a headache on waking next morning. The spirits are fairly good, and as soon as there is betterment she feels happy and buoyant; but the nausea and pain in the back depress her.” Influenza, two years ago, the only previous illness.

Physical examination revealed nothing abnormal save slight gastroptosis and a firm, easily-movable ovoid tumour midway between the navel and the anterior superior spine of the right ilium. The tumour was not tender, and on percussion of the lumbar region it was found that there was distinct loss of dulness over the right loin. On manipulation the tumour could be pushed upwards, backwards, and outwards under the liver, and the normal dulness behind was thus restored. Some nausea was experienced by the patient during the manipulation. On deep inspiration the kidney could distinctly be felt slipping out from under the liver, and it assumed the position in which the tumour had previously been felt; thus leaving little or no doubt as to the existence of a freely wandering right kidney. All the other organs were apparently normal in site and condition save the right kidney and the stomach. Subsequent examination per rectum revealed palpable sigmoid prolapse, so that this case might fairly be designated as an example of multiple enteroptosis.

The patient was kept in bed for four weeks and spent some hours daily with the hips raised above the level of the shoulders. The unclothed weight on admission was 9 st. 5 lbs.; on discharge, 10 st. 1 lb. An abdominal belt with pad was fitted.

After a week’s sojourn at the seaside the patient was seen again. The kidney was felt in its normal situation, and did not slip down on deep inspiration as before. It rose and fell, but there was no escape into the anterior segment of the right lumbar region. The patient felt “fit and well” in spite of very hot weather. No headache, appetite good, no nausea, and the tongue, which every now and then in the first few days of treatment furred thickly, was then clean and moist.

In December, 1893, the patient was seen again, and there had been no return of nervous exhaustion nor pain.

At the end of 1894 she was feeling very well, the rapid action of the heart recurred at long intervals, and there had been a little swelling and stiffness of both knees, which had subsided. The clothed weight was 11 st. 9 lbs. The heart sounds and area of dulness were normal. The tongue was flabby but not furred, the stomach limits normal, and the kidney could not be felt more than normally.

CASE 3.—Mrs. H., aged 46, was admitted in June, 1893. She had been quite well up to 1877, when there was an attack of rheumatic fever.

Three years later, while out hunting, she was suddenly obliged to stop owing to dyspnœa. This was followed by frequent attacks of vomiting and pain in the right side of the abdomen, accompanied by headache, both temporal and occipital. "The whole digestive apparatus was upset" just before and during the catamenial period until in 1888, after treatment under Dr. W. Playfair, she was much better for a time; the vomiting ceased, the attacks of nausea became less frequent, but the sick headaches, nauseating pain in the abdomen, and prostration again recurred, with some loss of flesh.

Physical examination revealed mitral disease, a systolic murmur, loudest at the apex, audible also in the left axilla and angle of the scapula, and a diastolic murmur with slight thrill in the fifth interspace in the left mammary line, where the impulse was situate. The murmur was of a "to and fro" character with accentuation of the second sound. The pulse was feeble, irregular, and very compressible. The period came on the day after admission, and was accompanied by headache, nausea, and pain in the right lumbar and iliac regions. Examination of the abdomen showed nothing remarkable save that the right kidney was movable, and slipped in and out of place with a sort of click. Anorexia, insomnia, and nervous prostration were very marked symptoms, while the pain in the abdomen appeared to be very severe. She had found that when there was insomnia, lying on the left side with the right knee drawn high up generally enabled her to sleep.

During the first week absolute rest was enforced; the headache occurred at intervals, sometimes occipital, at others unilateral temporal, during the period, which lasted five days and was not profuse. After the first week the urine was measured and tested daily. At first scanty (15–20 ounces), high coloured, loaded with lithates with a high sp. gr., 1025–1032, and always a small amount of albumen, it gradually became paler with a sp. gr. of 1020–1028, from 20 to 30 ounces being passed daily, and only a trace of albumen was occasionally found, coinciding with temporal headaches, which occurred three times during the month of treatment. The unclothed weight on admission was 8 st. 5 lbs., and rose to 8 st. 11 lbs., but no further gain in weight was made.

Some slight œdema of the feet noticed at first subsided under the influence of rest and gentle massage. The diet consisted of light meals of farinaceous foods, with milk; peptonised milk was also taken in a liquid form in small quantities, at intervals of an hour, from two to three pints daily. The kidney was secured by a pad and bandage, carefully adjusted after abdominal massage daily. No abdominal pain was felt after the first week, nor was nausea complained of after the twelfth day, when there was nausea and faintness in the early morning for about half an hour. The general condition of the patient improved while under the treatment, but some two or three months afterwards her cardiac troubles increased, and 13 months later she succumbed to pulmonary œdema after an attack of syncope.

The mother of this patient was said to have suffered from "tumour on the liver"; the sister had a right floating kidney successfully treated by the writer.

CASE 4.—Miss M. T., aged 44, was admitted in June, 1895, complaining of frequently recurring severe pains in the hypochondriac and epigastric region, with general aching and stiffness about the lower part of the abdomen and in the lumbar region. Six weeks previously she had first

noticed these symptoms, and after their first appearance she had a fall from a horse while in the act of mounting. This jarred her, but she got up and the ride was taken. On her return home, the pain being more severe, she went to bed and remained, under the care of her medical adviser, Dr. Waddell, for a week in bed. Floating kidney was diagnosed and a padded belt was prescribed, but it had been discarded by the patient as uncomfortable.

Previous illnesses: Scarlatina and infantile complaints, bronchitis, asthma, and hæmorrhoids for some years. She could not ride nor drive without sneezing and the eyes watering copiously.

Present condition: Well nourished, rather sallow, tongue thickly furred, pulse 100. Catamenia regular and painless. Appetite bad, bowels irregular. Mental agitation when pain comes on, and some depression in the intervals. Has lost weight and flesh rather quickly, though she is still not thin. Sleep good. Every morning on waking there is severe pain in the right lumbar region and across above the navel to the opposite side.

Examination of the abdomen reveals gastroptosis and right nephrop-tosis. There is great tenderness when the kidney is felt between the two hands. Its position on the first examination was just above the crest of the ilium lying vertically, the upper margin distinguishable below the twelfth rib behind. The abdominal walls were soft and easily compressible; the limits of the stomach being from the sixth left interspace above to the level of the navel below, and extending from just outside the mammary line on the left to the level of the ninth costal cartilage on the right, 2 inches within the right mammary line. The liver dulness was normal, there was no pain on pressure over the gall-bladder, nor any tenderness in any other part of the abdomen save on manipulation of the right kidney, when pain shot and radiated through the loins, back, and belly, and nausea was always felt if the kidney was touched during the first two weeks of treatment. For 10 days there was frequent pain of a colicky and dragging character, but not resembling either hepatic or renal colic, in the direction of the pain. There was no retraction of the abdomen. The kidney was padded and bandaged in position, but each time the restraint was removed it slipped down and caused recurrence of pain. The urine was sometimes pale, at others high coloured, occasionally traces of albumen (on the second day an appreciable quantity), no blood discs nor casts; sp. gr. 1020-1026, urates and phosphates.

Weight unclothed on admission, 7 st. 1 lb.; 3 lbs. were lost in the first fortnight and regained later; gradually the tenderness subsided, the tongue became less furred, appetite improved, and the patient left with a well fitting abdominal belt and pad which retained the kidney in its proper place without causing pain. Only 6 lbs. in weight was gained during the "rest cure," but no attempt was made to overfeed the patient, whose weight, unclothed, on leaving was 7 st. 7 lbs. In November of the same year I saw the patient again, when she complained of only slight pain across the abdomen, on a level with the navel, occasionally at night. The right kidney could not be felt, the stomach level seemed to be two fingers' breadth above the navel.

In May, 1896, the patient was again seen and was quite well save for a pain over the back of the neck and shoulders. The kidney had caused no trouble, she rode on horseback and on a bicycle without any inconvenience. The asthma was less troublesome. In March, 1897, I saw the patient, who was "quite well," and able to lead an active and useful life.

CASE 5.—Mrs. T., aged 45, was admitted for treatment in October, 1895, complaining of gradual loss of weight, sleeplessness, headache, both occipital and vertical, backache, anorexia, epigastric uneasiness, and constipation, with nausea, occasionally “dark waves over the eyes,” and somewhat profuse perspirations.

Previous illness : She had suffered from fibroid tumour, both ovaries had been removed, and since then there had been no hæmorrhage. Three years ago she first noticed the epigastric discomfort, not amounting to pain. As this continued she lost flesh, and found difficulty in battling with anxieties and troubles, finally breaking down under a concentration of bereavement, having lost four near relations within 18 months.

Physical examination : The trunk and the limbs were not very thin, but the abdomen was scaphoid in shape, with little or no subcutaneous fat, the walls being very flabby and the abdominal reflexes absent. Respirations, 17 ; pulse, 98 ; temperature, 98.4° ; heart sounds feeble, the first being very short. Nothing else remarkable in the chest. Palpation of the abdomen revealed the presence of a firm ovoid swelling lying to the right of the umbilicus, vertically, which slipped upwards and backwards on bimanual manipulation. There was also slight gastroptosis, but the lower border of the stomach did not extend below a point 1 inch above the navel. Urine, sp. gr. 1020 ; no sugar. Albumen—a trace, phosphates. The unclothed weight on admission was 8 st. $7\frac{1}{2}$ lbs. ; eight weeks later, on discharge, 9 st. $2\frac{1}{2}$ lbs.

The sleep in this case was very variable, and for the first week not more than four hours' consecutive sleep was obtained in each night. Attacks of palpitation occurred sometimes by day and at others by night, the pulse running up from 96 to 100, 110, and once to 120.

After a month's treatment by rest in the recumbent position, with massage and simple diet, by no means excessive in quantity—three light meals per diem, with meat juice twice daily between them, being all that the patient ate—there came nine good nights in succession, followed by a bad one, with great agitation, heart hurry, and general discomfort. On examination it was found that the right kidney, which had been carefully replaced on admission and daily padded and bandaged in position, had slipped down. It was lying apparently diagonally across the right lumbar region, about the level of the umbilicus. Bimanual manipulation plainly showed the position of the organ, which was replaced without difficulty. Prior to this the urine, since the patient's admission, had been free from albumen ; now there was more than a trace in the daily specimens, and during three nights of broken sleep there was always a trace of albumen in the urine, which was passed three or four times in the night. No weight was gained during the week. From that time progress was fairly good, though the gain in weight was not remarkable. Headache disappeared, appetite improved, the perspirations ceased, and the bowels acted regularly every other day, sometimes daily. The power to concentrate thought, to dismiss doleful ideas, and to take a brighter view of life returned. A visit to Brighton in stormy weather brought on trigeminal neuralgia, which, however, was speedily relieved, and the patient returned to her home much improved in health and spirits.

With a padded belt the kidney was kept in place, and in July, 1896, I could only feel the lower third of the kidney on deep bimanual palpation during inspiration. It did not slip out and wander into the lumbar region in front, where it had previously been felt.

In January, 1897, the patient reported excellent health and further

gain in strength and flesh, and in February an opportunity arose for making a thorough examination of the patient's condition, when nothing whatever of an abnormal nature could be discovered in the shape, size, position, or functions of the abdominal organs and walls. Steady gain in weight and health was shown by the marked increase in quantity and quality of flesh, the freedom from headache and all the other symptoms previously present, and the power to enjoy active pursuits without undue fatigue.

Recent inquiry has elicited the fact that this patient still continues to enjoy excellent health.

CASE 6.—Captain M., aged 36, was admitted in October, 1895, suffering from a sense of strain and tightness over the small of the back, flatulence, abdominal distension, constipation, nausea, and frequent attacks of sickening pain in the umbilical region attended by a sensation of dragging and weight in the right loin and hypochondrium. Nervousness, trembling fits, dread, tightness in the head, mental depression, and all sorts of terrors had increasingly assailed him during the past twelvemonth, in which he had lost more than 2 stone in weight. The abdominal pain and general malaise frequently prevented sleep; otherwise, when not so distressed, he generally slept until about 5 a.m., when nightmare awoke him, and great depression of spirits, with painful thoughts, made him restless and agitated. Sometimes he awoke suddenly with great pain in the back, loins, and abdomen, palpitation of the heart, with great agitation and such physical restlessness that he could not remain in bed, though moving about seemed to increase the nausea and pain.

Physical examination revealed evidence of loss of flesh; there was little subcutaneous fat anywhere over the trunk or limbs. Nothing abnormal about chest. Respiration, 24; heart sounds normal, but rapid; pulse, 110; temperature, 99°; hands and feet cold and bluish. Tenderness over seventh cervical and second dorsal spines, and generally over the lumbar region. Knee jerks exaggerated; no clonus. Abdomen scaphoid; right rectus tense, left quite relaxed. On palpation there was tenderness, and a tumour could be felt just under the navel, and apparently lying close under the abdominal wall, firm and cylindrical, somewhat resembling a "Cambridge sausage"; on rather firmer pressure the tumour disappeared, the patient complaining of nausea. The stomach was distinctly dilated, the gastric note extending from the junction of the left sixth costal cartilage with the sternum outwards along the upper border of the fifth rib to beyond the left mammary line in the fifth intercostal space, thence vertically downwards to the lower border of the left ninth rib, and from this point the lower border extended downwards to the navel and across to the right eleventh costal cartilage. The splashing sound could be elicited over this area without difficulty, and on pressing the hand upwards against the lower border of the stomach the splash of the gastric contents against the lesser curvature could be distinctly heard with the stethoscope. The limits of the stomach were verified by ausculto-percussion and by the effervescent powder test. In the erect posture the abdomen was pear-shaped. Examination per rectum, nil.

Nothing in the history of the patient threw any particular light on the nature of his malady, the previous illnesses being enteric fever in 1881 and insolation 10 years later; but on examining the abdomen again on the following morning a firm, rounded swelling could be felt to the right of the navel, which slipped upwards and backwards on very slight

pressure. Bimanual examination plainly showed the existence of a freely movable right kidney, and the patient then mentioned that some 10 years previously he fell in a race, felt great pain and weight in the right side of the belly and loin, and passed blood in the urine for a week after. Off and on since then there had been attacks of pain, but none so severe as during the last twelvemonth. The urine, on being examined, was very acid, sp. gr. 1025; no albumen, nor sugar, nor blood. The unclothed weight on admission was 9 st. 10 lbs., and at the close of each week respectively 10 st. $3\frac{1}{4}$ lbs., 10 st. $4\frac{1}{2}$ lbs., 10 st. 8lbs., 10 st. 9 lbs., and 10 st. $10\frac{1}{2}$ lbs.

The abdominal pad and bandage, which was applied after the massage of the abdomen every day, being readjusted after each manipulation administered, three times a day and sometimes oftener, very frequently was found to be shifted; and sometimes, even when securely sewn overnight, in the morning the bandage was in disorder, and the kidney would be found displaced. This occurred until the end of the second week, when means were taken to adjust the bandage so that the pad would not shift, and the recurrence of pain and nausea was afterwards very rare. There was steady improvement in the mental and nervous stability of the patient *pari passu* with the gain in weight and in muscularity of the abdominal walls.

In all cases of enteroptosis the effect of the local massage is most marked, and it will often be noted that the improvement in texture of the abdominal skin, the increase of subcutaneous tissue, and greater bulk and tone of the abdominal muscles will be more early noticeable than in any other part of the limbs and trunk. It would seem that the more frequent administration of abdominal massage determined the local increment of tissue. Unfortunately, more frequent massage of the whole trunk and limbs does not produce corresponding general gain. In the case of this patient the stomach itself shared in the better nutrition, and 28 days after admission the limits were normal; the salol test, which gave no reaction until after the lapse of one hour and a quarter on the second day of treatment, when applied on the 28th day yielded a rich violet colour in 20 minutes.

At the end of the year I saw the patient again. He had experienced an attack of nervous dread after a hard day at golf, but was able to shake off the depression. The bodily weight was maintained, the right kidney could not be felt out of place, and there was no distension of the stomach or intestines.

At intervals I have heard from him, and, with rare attacks of "nervousness," he has done well and been able to pursue his occupation. On his own account he had obtained the services of a *masseur*, and in the early part of 1897 wrote that after having been rubbed for a short while he felt very well and free from discomfort.

CASE 7.—Miss T., aged 27, was admitted in April, 1896, complaining of violent paroxysmal pain in the right side, extending from the right lateral region of the chest downwards into the iliac fossæ. This severe pain occurred at irregular intervals, and between the attacks there was dragging pain in the back, loins, and epigastrium, with nausea, palpitation, and great depression. Headache over the right eye, constipation, unrefreshing sleep, with restlessness and alarming dreams, also distressed her, and she felt "quite unfit for anything." Catamenial period every fortnight, with an increase in the severity of all the pains, obliged her

to keep quite still, as any attempt at exercise appeared to bring on the paroxysmal pain.

The patient was quite well and of a very cheerful disposition up to a time about six months ago, when within four months both her parents were taken ill and died. She nursed them both, and felt no ill effects until on one occasion when lifting her mother she felt a wrench in the right side with sickening pain, which was similar in character to the twisting paroxysmal pain she had experienced since at intervals. Her friends had encouraged her to try and shake off her depression and to distract her mind from her aches and pains; but she found them too severe, and recognised that exertion of any kind made her worse. There had been little or no loss of flesh, and the patient looked fairly well nourished, though sallow and apparently fatigued. The tongue was dry and furred brown; pulse full, steady, 80; temperature, 98.6° F.; heart and lungs normal. Some tenderness over the right hypochondriac region, but no tender spot anywhere above the navel. On bimanual examination of the right loin the right kidney could not be felt as usual on deep respiration, though the left kidney could be felt on similar manipulation of the left loin. In the right iliac fossæ, below the level of the anterior superior spine of the ilium, a firm, rounded swelling could be felt which was tender to touch and movable. On deeper manipulation it slipped away, and could be followed up into the right loin, being replaced in its normal position, when the renal dulness behind, which was previously absent, returned. A pad and bandage were immediately applied.

No paroxysm of pain has since recurred in the 15 months which have elapsed; but there was some pain, neither severe nor prolonged, at the menstrual periods during treatment, and this has recurred occasionally just before the onset of the periods, which are now regular and monthly, whereas before treatment they had been fortnightly.

During the six weeks' treatment there were two menstrual periods, and immediately preceding them pain was felt in the right hypochondrium and in both iliac regions. There was some ovarian tenderness, and a great deal of tenderness on bimanual handling of the right kidney. Moreover, the nausea, general abdominal malaise, and dull frontal headache heralding the arrival of the period, pointed to the existence of congestion of the digestive organs so frequently occurring in dyspeptic females.

On admission the urine contained albumen in noticeable quantity—again before the first period there was albumen for two days, but none after until before the second period, when again there was a trace for four days. In spite of the well-nourished condition of this patient she gained 10 lbs. in the six weeks of treatment, becoming much firmer and quite rosy-cheeked. It must be said that in this case a contented mind proved to be a continual feast, for the freedom from pain and the thorough rest were very greatly appreciated. There was never at any time the slightest evidence of hysteria or morbidity, yet the friends of the patient had been under the impression that she was suffering more from mental effects of orphanhood than from any physical illness, and regarded the severe paroxysmal pain as "hysterical." I saw one of these attacks, and was fully satisfied, not only of the reality of suffering, but of the due proportion between cause and effect in the position and tenderness of the dislocated kidney on the one hand, and the pain, disturbance of functions, and quite reasonable dread experienced by the sufferer.

I saw this patient at the end of July, 1896, when she was quite well,

and had been free from pain save at the time of the period, when it was neither severe nor prolonged. She said she "felt better than ever in her life, slept well, and required no drugs"; the catamenia were regular and painless when I saw her again in October. Shortly afterwards she had an attack of influenza, and complained of a morning cough and increasing deafness, but was otherwise very well; later accounts have been very good, and, so far as any renal or digestive troubles are concerned, health is completely re-established at the time of writing—more than twelve months after treatment.

CASE 8.—Miss H., aged 55, was admitted in October, 1896, complaining of painful aching in the right hypochondrium, burning pain in the chest after meals, constipation alternating with diarrhœa, great nervousness, vertigo, mental depression, and physical weakness. All these symptoms had been gradually increasing in severity until now, after trying to pursue a very active life, involving much mental and physical fatigue, she felt unable to fight any longer against the nervous exhaustion which unfitted her for her household and social duties. In the previous winter she first noticed the giddiness, nausea, and depression; for five weeks being so nervous that she could not bear to be left alone. The digestion was deranged, there was severe pain in the right side, constipation, and anorexia with great sense of weakness. Gradually, under treatment, she became better and took an active part in a bazaar, when the abdominal pain again recurred, with diarrhœa. Every autumn she had been abroad to one or other of the well-known spas or health resorts, and in August had been to a Swiss Alpine resort, but returned no better, still feeling giddy, with heartburn, constipation, or diarrhœa, pain sometimes in the right shoulder, at others "in the liver" and right loin, of a gnawing and dragging character, with shooting pain in the groin.

On examination nothing abnormal could be found save a freely movable right kidney which could be felt quite distinctly in its whole length between the ribs and the crest of the ilium, and slipped upwards with a sudden dive under the ribs just as if it had a socket into which it fitted. There was no tenderness on pressure, but a slight feeling of nausea and a sharp shooting pain up into the shoulder blade. The abdominal walls were somewhat flabby, but the reflexes were exaggerated. The patient was very nervous and, as she herself said, "more frightened than hurt" when examined. The sigmoid flexure was prolapsed, otherwise no other physical sign of mischief was discoverable save a slight lateral curvature and marked pallor of the whole surface of the body. There was a strained expression of the countenance almost amounting to anxiety, and the whole aspect of the patient was one of fatigue and suffering. She had been sleepless, emotional, and melancholy, though naturally a good sleeper and very buoyant in spirit. The tongue was dry and furred white. Urine, sp. gr. 1025; no albumen, lithates, and phosphates.

During the first week the pain, nausea, and heartburn persisted, gradually lessening in frequency and duration; the sleep was better from the first and the patient became more cheerful, only occasionally relapsing into a depressed condition, from which she speedily rallied. In the month of treatment $10\frac{1}{2}$ lbs. were added to the body weight, and she left feeling well and strong, being provided with an abdominal belt with renal pad. On reaching home she felt the cold very much and suffered from a chill.

I saw the patient in January, 1897, the right kidney could only just be

felt on deep inspiration and did not slip out any more. On the advice of Dr. Huxley, who sent her to me, she went to the south of France, whence she wrote in March in good health and spirits. During her stay under treatment I received a note from the husband of this patient's sister, a well-known physician, telling me that his wife had also a right floating kidney.

Of the result of treatment in this case it is too early to say anything, save that the immediate effects appeared to be all that could be desired. So far as the local conditions were recognisable there was nothing in the symptoms directly pointing to the existence of a floating kidney, and it may be contended that the betterment bore no relationship to the reposition of the dislocated organ; but the cessation of the aching pain in the right side corresponded with the return of the kidney to its normal situation, and the shooting pain in the right groin was not afterwards felt. So that, although the dyspeptic derangement might have arisen independently of the nephroptosis, it seems reasonable to believe that they were in this, as in other cases, interdependent. No doubt the recumbent position aided in overcoming the mechanical impediment to regular relief from the bowels caused by the sigmoid prolapse, and thus one cause of trouble was partially relieved; while the improvement in the texture and tone of the abdominal wall, palpably produced by regular massage, restored the normal pressure on the abdominal viscera, and, as a result of manipulation, the nutrition and muscularity of the bowels themselves were also greatly improved.

It will be observed that in all these cases there were physical signs, local and general symptoms which are attributable to the dislocation and mobility of the right kidney, and, judging from the unfortunate consequences following disregard of this lesion and neglect of treatment in cases which have come under observation, it may be alleged that much suffering and chronic ill-health can be averted by means entailing none of the risks that may possibly be incurred by operation. Moreover, there must be many nervous invalids reduced to a condition of chronic debility by nephroptosis who would not submit to the operation of nephrorrhaphy if by any other means restoration to easy and comfortable health could be gained. For these the treatment by the "rest cure" affords a good prospect of relief, and should certainly be given a fair trial before the adoption of more heroic measures. The only case within my cognisance in which the rest cure was a complete failure occurred in a lady who had previously been subjected to double oophorectomy. She had for many years suffered from chronic congestion of the liver; there was an adhesion of a portion of the small intestine at the bottom of the Douglas pouch. By no means that the care and skill of the most distinguished practitioners of physic and surgery could

devise was it possible to improve nutrition, and no permanent effect was produced on her condition by any treatment. The unclothed weight never rose above 6 stone, and by reason of the emaciation it was impossible to adjust any form of abdominal belt affording sufficient support to the kidney without producing intolerable discomfort. It is very doubtful whether, with the complications, in this case the operation of nephrorrhaphy would have succeeded, and at all events the patient refused to submit to any further operative interference. In detail, the treatment adopted in the eight cases here recorded was as follows:—

The patient was confined to bed and after reposition of the kidney a pad, varying in size and shape according to the conformation of the belly, was applied and maintained in position by a broad flannel roller encircling the abdomen from the pubis to the umbilicus, with one or two turns of the spica in order to prevent riding up. Twice, and often more frequently, daily the abdomen was well rubbed and kneaded,* care being taken to avoid any pressure which should tend to disturb the kidney. Before and after the abdominal massage the organ was examined bimanually and replaced if found to be dislocated, the pad and bandage being then readjusted. In some cases, especially in those wherein other enteroptoses were co-existent, the patient was placed in the dorsal-decubitus with the hips higher than the shoulders for some portion of the day, but at night no restraint was put upon choice and freedom of position lest this should interfere with sleep. In addition to the massage of the abdomen general corporeal massage was administered once and, in some cases, twice daily.

In Case 3, owing to the condition of the heart, the patient was rigorously kept in bed; but in the others a daily bath was given and they were allowed to rise for the purposes of nature. When it appeared necessary the flannel roller and pad were replaced by indiarubber appliances for use in the bath. In addition to the rubbing and kneading of the whole body and belly at the expiration of periods varying with the progress of the case, exercises were practised; first, the usual passive, active, and resisted movements of the limbs, and afterwards special movements devised with a view to call into play the abdominal muscles. Now these

* *Vide* 'The Practice of Massage: its Physiological Effects and Therapeutic Uses,' p. 14, by A. Symons Eccles.

need to be carefully supervised, because if the pressure exercised on the viscera by contraction of the abdominal muscles is in the wrong direction and attended in the earlier stages of treatment by fixation of the diaphragm, the movable kidney may easily be pushed out of its proper resting place and thus the very object of treatment be defeated. It is true that in three cases treated by partial rest and exercises, not under my immediate supervision and constant attendance, good results have been obtained without so long and carefully systematised treatment as was adopted in the eight cases referred to here,* and my successor in the presidential chair of the West London Medical and Chirurgical Society has recorded the good results he has obtained in a case of lack of abdominal muscular development by similar means. But failure in other cases where amateur rubbing and half measures were adopted has induced preference for thorough treatment in which the risk of failure is reduced to the lowest possible minimum. In the systematic movements employed for the purpose of restoring tone to flaccid bellies it is well to avoid exercises at first which involve either deep inspiration or "holding the breath," for any such efforts will assuredly shoot the freely movable kidney out of its place, just as straining at stool or a sudden movement of the trunk or even wincing will produce similar effects. Bimanual examination of the lumbar region during deep inspiration, fixation of the diaphragm, or vigorous contraction of the recti or oblique muscles of the abdomen will speedily prove that great circumspection in the choice and regulation of ventral exercises is advisable in these cases.

Alternate retraction and relaxation of the hypogastric region is the first movement prescribed, then semi-rotation of the trunk from the dorsal towards the right lateral decubitus is practised, followed by assisted raising of the trunk from the supine to the semi-recumbent attitude and back again. If these movements produce no ill effects they may be supplemented by unassisted rotation from right to left, upraising of the trunk from the recumbent position, lifting of both thighs (semiflexion of the lower extremities on the abdomen) with and without resistance, and other more complicated exercises much more easily demonstrated than described.

* *Vide* "Some Effects of a Lack of Muscular Development," by W. B. Clarke, 'West London Journal,' January, 1897.

All such movements, however, should not be practised until some evidence is afforded that nutrition, usually seriously impaired in these cases, has begun to improve. This will be visible in the altered contour of the abdomen, as also in the general increase of muscular tone in the trunk and limbs; the texture of the skin will also afford evidence as to betterment, and no surer guide can be followed than the condition of the subcutaneous tissue. That local massage of a part will be attended by rapid increase of subcutaneous fat is abundantly proved in the visible effects of abdominal manipulation in a very large proportion of cases in which massage of the belly has been practised more frequently than that of the rest of the body. It has been stated that in cases of neurasthenia the face first shows signs of better nutrition, but in my experience it is the abdomen which profits first in regaining normal thickness and tone of its walls, doubtless because in the larger number of cases treated by the "rest cure," digestive troubles have been prominent features, and special attention has for this reason been paid to the abdominal manipulations.

In these cases of floating kidney no less than in other forms of enteroptosis and functional disorder of digestion, the indications are to restore healthy tone and to induce the re-deposition of fat and flesh to the abdominal walls as well as to improve the nutrition of the viscera and replace the packing material of fat which in many cases has vanished. This, in most instances, can be done by judicious combination of frequent massage of the belly and loins, carefully-regulated diet, and, finally, gradually increased exercise, precautionary measures meanwhile being adopted by posture, rest, and mechanical support, to prevent and counteract the tendency to displacement and undue mobility engendered by want of proper support for the viscera.

It is not my purpose to discuss here the pathology of movable kidney, nor to attempt to differentiate between movable kidney behind the peritoneum and floating kidney enveloped in its own meso-nephron; but it appears that there are two conditions which are always present, one or the other—often both—in cases of freely mobile kidney, viz., flaccidity of the abdominal parietes and loss of fat. It is probable that in cases of tissue waste the internal fat, the packing material, is absorbed, before there are any very marked signs of loss as shown by the reduction in bulk of subcutaneous fat, so that it is by no means necessary for a

patient to exhibit the external symptoms of emaciation when the cause predisposing to the undue mobility of the kidney may yet be loss of the adipose tissue normally enveloping the organ.

But *pari passu* with the loss of internal fat, and before appreciable waste of the external layers, it will often be found in these cases that there already exists marked failure in muscular tone, and it is to this as much as to the loss of subcutaneous fat that flaccid and pendulous bellies are due. Thin or even emaciated persons are not always lacking in muscular tension. Many cases present themselves in which there is excess rather than diminution of the contractility of the abdominal walls, but in these there will not be found any signs of nephroptosis.

Even in Case 6, where on handling the abdomen there was exaggeration of the right rectus muscle reflex, the rest of the abdomen was flabby, and, on the assumption of the erect posture, the belly, which was concave in the recumbent attitude, became pear-shaped, the hypogastric and iliac regions bulging, while the lumbar regions were hollow and the epigastric region quite flat.

An instance of the possible production of movable kidney by the rapid reduction of fat without any corresponding gain in muscular tone was recently afforded in the case of a gentleman who consulted me some time after having been rigidly dieted for obesity. He had succeeded admirably in getting rid of the superfluous fat, and had reduced his bulk and weight without apparent discomfort for some months when he noticed slight pain in his back, which was sometimes attended by nausea and pain "over the liver." On examination I could find nothing save a freely movable kidney on the right side, and a very flabby condition of his abdomen and indeed of the skin generally. His cheeks were flabby, the skin all over the limbs and trunk hung loosely, and indeed, as was expressed at the time, his integuments appeared to be a "misfit." There was no anæmia, and, save for the increasing nausea and pain in the back and loins, he complained of no discomfort. I urged the necessity of rest, massage, and exercise, attributing his condition to the rapid absorption of internal and external fat due to abstention from carbo-hydrates. Circumstances prevented the patient from abandoning even for a short time his sedentary occupation, so an abdominal belt with kidney pad was ordered, and massage and exercises to improve the tone of the skin and muscles were prescribed, I do not know

with what result, as he declared he could not spare the time, and I have not seen him since. The treatment of obesity, and especially of anæmic obesity, by rapid reduction of the superfluous bulk of adipose tissue by diet, without any regard to the improvement of muscular and cutaneous tension, appears to be less free from untoward consequences than it would seem to be at first sight. That floating kidney is often overlooked, that it may be a frequent concomitant, if not a cause of nervous dyspepsia and of all the vague sensations some nervous invalids experience, seems to be very probable; the cessation of the symptoms following treatment directed to the purpose of obtaining and maintaining the reposition of the organ pointing to the advisability of recognising early and dealing with enteroptoses which appear to give rise to neurasthenic troubles.

The PRESIDENT made a few remarks on what he called the common-sense aspect of the question. He would divide cases of movable kidney into two groups, according as the patient knew or did not know that he or she had movable kidney. He thought that when the doctor discovered movable kidney he should generally keep his information to himself, for such persons were very apt to develop movable kidney mania. If they did not become aware of the fact, something might be hoped in the way of a cure. He did not deny that cases did occur in which movable kidney did mechanical mischief, and became the source of irritation and reflex troubles which might be very severe and called for treatment, but such cases, he urged, were a minority. When he himself discovered a movable kidney in a hospital patient, he always enjoined his house physician to be silent on the subject. He would certainly prefer the author's treatment to any other, viz., to increase by mechanical processes the general nutrition.

Dr. DE HAVILLAND HALL referred to the case of a lady who came to him two years ago at the advice of an obstetrical physician, who reported that there was nothing wrong with the uterus, &c. He found that she had a very movable kidney, and he told her he thought he had discovered the source of her troubles. She was greatly pleased with this, and had improved from that date. He had ordered her a pad and bandage, and he had only had occasion to see her professionally once since that time. He had, of course, assured her that if this simple treatment did not relieve her, at the worst the kidney could be stitched to the side.

Mr. FREYER said he would have liked more details in respect of the method of treatment recommended by the author. His views as to the proper treatment might be gathered from the fact that he had at present five patients, four private and one in hospital, on whom he had operated recently for movable kidney. He said he had never seen the slightest permanent advantage from massage or mechanical appliances. The last case had been subjected to a very severe course of massage. She was extremely stout, with 2 inches of subcutaneous fat, in spite of which there was not a trace of fat around the kidney. This absence of fat might possibly be attributed to the course of massage, which may have led to its absorption.

Dr. SYMONS ECCLES, in reply, agreed that some patients were better left in ignorance of their state, lest they made a bogey of their movable kidney ; but he recalled to the recollection of the President a case over which they had met, illustrating what might occur when the patient was totally unaware of the lesion. In that case the patient had suffered from tachycardia for years, and till the latter end of her life she found that relief was obtained from paroxysms of heart-hurry when lying on the left side, with the right thigh flexed on the abdomen, and the right arm above the head. He had found this position give relief to others suffering from right nephroptosis, and described the posture as that of auto-reposition of the kidney. In all save two of the cases recorded in his paper the patients were unaware of the cause for their suffering, and were not informed in many instances ; though he thought where they had been very ill from nephroptosis, and had gained benefit from treatment, they might properly be warned against overstrain. None of the cases reported well had been less than a year under observation after treatment.

December 13th, 1897.

A CASE OF PANCREATIC CYST TREATED BY INCISION AND DRAINAGE, WITH COMMENTS.

By ALBAN DORAN, F.R.C.S.

IN the case of ovarian cysts in the early days of ovariectomy there were at least two points fairly definite. The nature of the cyst was, as a rule, easy to determine, at least anatomically. Its removal was clearly the right course to pursue, whatever the dangers of operation might be. On the other hand, the precise nature and relations of a pancreatic cyst are not always to be made out even by an exploratory operation, nor is it certain that its extirpation is always justifiable, even if practicable. Drainage after incision, disastrous for an ovarian cyst, seems to answer well when the cyst is connected with the pancreas.

A patient study of the pathology, diagnosis, and treatment of the disease in question can alone ensure progress in the right direction. Already the literary records of pancreatic disease within the past 20 years have grown voluminous, and the whole subject cannot be discussed satisfactorily in one memoir. The present communication will therefore consist simply of an account of my own case, with comments on its principal features based upon the experience of others.

E. H., aged 24, single, domestic servant, a patient of Dr. J. Williams, of Connaught Street, W., was admitted into my wards at the Samaritan Free Hospital, on May 21st, 1897, on account of a prominent abdominal tumour. To all appearances she was a cheerful, well-nourished, healthy-looking girl, who might have passed for 18 or 19 years of age. Her complexion was perfectly clear, free from sallowness, jaundice, or from any of the usual signs of anæmia, nor did her features express suffering. Her pupils were much dilated, and the uvula elongated. The pulse was 84, the temperature normal or subnormal.

The history was somewhat at variance with these appearances. Four years previously she had suffered from melancholia, and the affection returned a year later, lasting over 10 months. She was very quiet during the attacks, but then, as in hospital, she was restless at night, often jumping out of bed in her sleep. No history of any fall or injury could be obtained, but it is clear that she might have injured herself under the above circumstances.

For the last two years her friends noticed that the abdomen was enlarging. Nearly 18 months ago she had fits of spasmodic pain in the epigastrium with nausea, but no vomiting. These pains gradually became more frequent, though not very violent, and, before admission, occurred about every third or fourth day. She, however, gained rather than lost flesh, and her mental condition greatly improved.

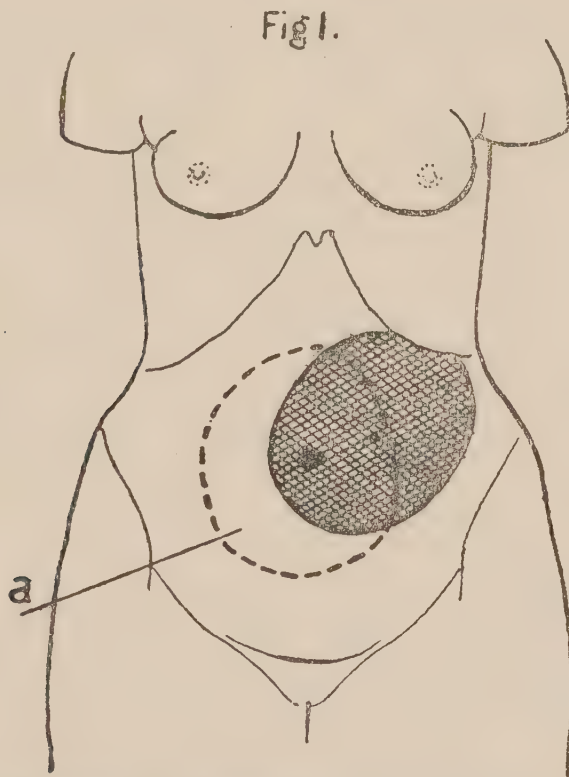
The abdominal tumour was remarkably prominent, and still more remarkably movable. Fig. 1 shows the range of its mobility. As the patient lay down it appeared to be seated in the left part of the abdomen superiorly, reaching the left loin, the ribs, and the umbilical region; it extended to about 2 inches beyond the middle line to the right, and 3 inches below the umbilicus. It could, however, be pushed to the right till it was perfectly central in position; then there was a clear note in the left loin, and resonance between the tumour and the liver.

The tumour fluctuated distinctly, and its surface felt very smooth. There was no resonance on percussion, excepting occasionally in the course of the first week in hospital, when a clear note could be obtained over a soft prominence on the lowest limits of the tumour to the right. This prominence was evidently part of the alimentary canal, and proved to be the stomach.

The uterus was small and movable, and unconnected with the

tumour. I explored the pelvis carefully, as I have removed tumours from the lumbar and hypochondriac regions which proved to be ovarian cysts twisted off their pedicles. The urine was perfectly normal, nor was there any evidence of any hepatic or thoracic disorder. The fæces were solid, fairly dark, and never pale.

Altogether, the tumour seemed to me to be most probably renal, but I thought of cysts of the pancreas and transverse mesocolon. Unfortunately, the clinical history of spasmodic pain in the epigastrium was not obtained till after the operation. The patient stoutly declared before it that she had never suffered



Sketch showing range of mobility of pancreatic cyst. Author's case. *a*, Site of a bulging soft structure, which proved to be the stomach.

from any pain. Just a day before the operation the history of two attacks of melancholia was obtained. When the nature of the tumour was made clear, Dr. J. Williams succeeded, not without great trouble, in getting a complete clinical history. Not knowing the above history, I did not think pancreatic disease very probable.

I strongly object to paracentesis in cases of doubtful tumour, for I know of selected "dull" areas proving to be empty

flattened-out gut, and I dread blood vessels and papilloma. On May 29th, 1897, I made an exploratory incision, assisted by Mr. Targett, beginning close below the umbilicus. I had to enlarge the wound freely, upwards and downwards, for the first object I discovered was the stomach drawn tightly over the front of the cyst anteriorly and inferiorly (Fig. 2). The lesser omentum was stretched over the upper part. The great omentum hung from the lower border of the stomach, freely downwards; its vessels were extremely dilated and tortuous. It hung down, free from any adhesions, reaching to the hypogastrium, and bore much fat; the transverse colon was completely below the cyst. The pelvic organs were normal. I passed my hands up behind the great omentum, and found that the tumour lay too high to be tapped below the level of the umbilicus. I noticed that the transverse colon could be pushed down; in fact, the transverse mesocolon was certainly not opened up, nor was the mesentery involved.

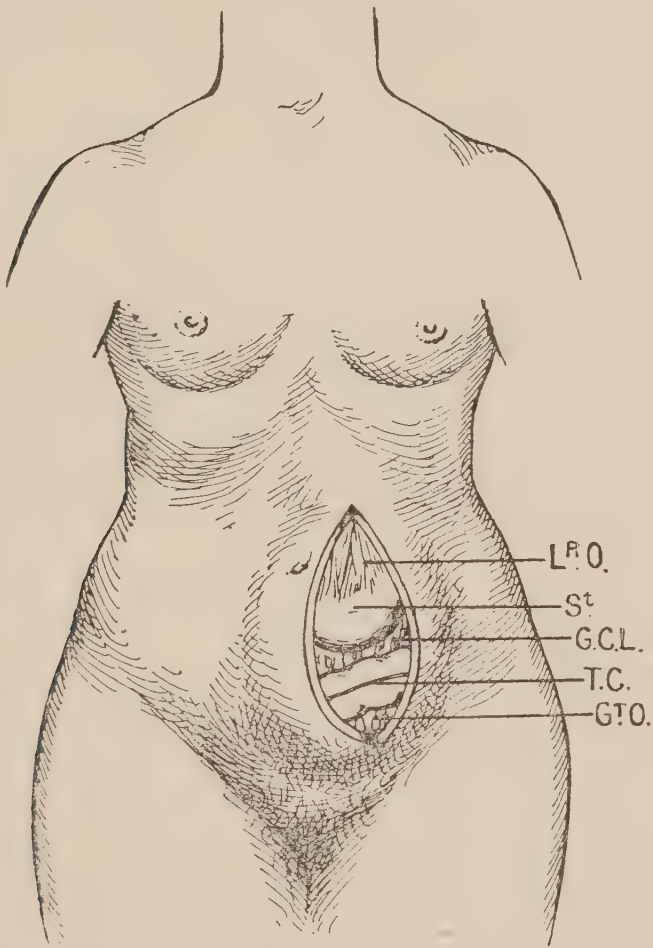
Having divided 2 inches of the lesser omentum on the most prominent part of the cyst, I exposed a distinct wall, and there was no trace of clot. By aid of an aspirator, 44 ounces of fluid were drawn off. This fluid was opaque, greasy, ochreous, and free from odour. The Clinical Research Association examined the fluid, and sent me the following report (Mr. Targett carefully searched for hooklets, but could find none, nor was there any trace of old hydatid membrane):—

“July 18th, 1897.—This fluid is faintly alkaline, of a dark straw colour; specific gravity 1011, free from odour; it contains a considerable quantity of albumen. On standing, an oily substance formed on the surface, consisting of fat and cholesterine crystals. There was also a crystalline precipitate which proved to be insoluble in alcohol, chloroform, or ether, and was certainly not fatty in nature. In appearance the crystals suggested tyrosin, but did not give the reaction of this substance; the quantity was too small for identification. On microscopical examination, no hairs or other characteristic elements were found.—C. H. WELLS, Secretary.”

Fixing a T-forceps on the puncture in the cyst, now well collapsed, I searched with my hand above and to right and left of the cyst. There were no adhesions, the kidneys and spleen could be felt, the diaphragm was not involved, the liver and gall bladder were quite healthy. The base of the cyst did not reach

either loin, but was incorporated with a wide area of the pancreas immediately to the left of the head. I cautiously attempted to enucleate the cyst around the puncture, but big veins soon appeared, and I thought it best not even to excise a portion of the cyst wall. As I found that it sprang from the pancreas, and that no pedicle could be formed, as in certain cases, where a pancreatic cyst has been successfully excised, I could see that the total removal of the tumour was unadvisable.

Fig 2.



Parts exposed at operation. Author's case. Lr. O., lesser omentum on cyst; St., stomach on cyst; G. C. L., "gastro-colic ligament," below cyst; T. C., transverse colon; Gt. O., great omentum, below colon. (See Fig. 4.)

I determined upon thorough drainage, with precautions. I sewed the parietal peritoneum and the cut borders of the lesser omentum to the cyst wall around the puncture, using No. 1 China twist. I passed deep silkworm-gut sutures into the abdominal wound above and below the cyst, tied them, and trimmed away the umbilical cicatrix. To make sure that the cyst was held

secure, and acting on a suggestion of Mr. Targett's, I passed a No. 4 silk, both above and below the puncture, through all the layers of the wound, the lesser omentum and the cyst wall, and tied the two silks.

Lastly, the T-forceps was taken off, the puncture enlarged, and a 6-inch glass drainage tube passed into the cavity of the cyst. This tube passed backwards and also very much upwards, as the stomach pressed on the under surface of the emptied cyst. The wall of the cyst was tough, and about an eighth of an inch thick, its outer surface pale yellow, its inner looked dull red and spongy, but was not vascular. The wound was now dressed, and the patient returned to bed.

AFTER-TREATMENT.

The patient went on very well after the operation, but gave some trouble, owing to two complications. An attack of tonsilitis and urticaria set in at the end of the first week, when the weather was intensely hot, but soon subsided, the temperature never rising higher than 100.6° . More serious was the great restlessness during sleep, an old-standing nervous symptom. When awake, the patient was remarkably quiet and obedient; directly she fell asleep, excitement set in, and she tried to slip out of bed. Her brother informed us that he was troubled in the same way after an operation for hernia, and he seems to have been a somnambulist from childhood.

Owing to the restlessness, I removed the glass tube on the second day, and replaced it by 6 inches of red rubber tubing. From first to last there was free discharge from the cavity of the cyst, staining the dressings; for a day or two after the operation it was pinkish and turbid, but for two weeks afterwards it appeared as a colourless, slightly viscid, alkaline fluid like saliva. According to two reports prepared for me by the Clinical Research Association, this colourless fluid had an extremely well-marked amylolytic power. Towards the end of the month the fluid got mixed up with discharge from the granulations in the integument around the drainage track, and hence could not be satisfactorily analysed.

Although there was much urticaria on the chest and hypogastrium at the beginning of the second week, the skin round the drainage tube never showed any signs of irritation.

The treatment consisted in washing out the cavity daily with a 1 in 20 solution of sulphurous acid. After the middle of the second week the patient rapidly gained flesh. She was discharged on July 7th, 1897. The abdominal wound had united well; it was 4 inches long. The drainage track opened nearly 3 inches below the ensiform cartilage, and was about $3\frac{1}{2}$ inches deep. The temperature had been quite normal for three weeks, and the patient was strong and able to walk about. There was still enough daily discharge to soak through two layers of gauze and stain the strapping laid over them. A short piece of tubing was left in the orifice of the track, which I thought advisable to keep open for awhile.

At the end of November the patient was in excellent health and had grown stout. The discharge during the first fortnight, which she spent at home, had been very scanty and thick, owing to pus from the granulations around the drainage track in the parietes. Once or twice a week a few drops of clear fluid issued from the track. (The last occasion on which I examined the abdomen was April 13th, 1898. The cicatrix was strong, the epigastrium concave, and no trace of any tumour could be felt on palpation. There was just enough oozing daily to stain the dressing.) Having described the case, I will now discuss its principal features of interest.

AGE OF THE PATIENT.

The patient in this case was of an age at which pancreatic cystic disease is relatively frequent—indeed, a quarter of over 100 recorded cases occurred in men or women between 20 and 30 years old. The oldest case was 76 (Stieda).^{*} On the other hand the youngest patient, who was under the charge of Dr. Railton, of Manchester, was a female infant 6 months old. The tumour in this instance was a true cyst springing from the tail of the pancreas; its wall was thick and tough. The youngest patient submitted to operation was a boy under 4 years of age (Schoenborn, *see* Heinrichius). He recovered after incision and drainage with iodoform gauze.

^{*} "Eine Pankreascyste," 'Centralblatt für allgemeine Pathologie u. pathol. Anat.,' vol. iv, 1889, p. 449. This cyst was accidentally found at the necropsy of a woman, aged 76, who had died of bronchitis. It sprang from the substance of the tail of the pancreas. The wall was "tough connective tissue, poor in cells," and the cavity contained blood.

DILATATION OR CONTRACTION OF PUPILS.

The pupils were much dilated before and after the operation. In Treves's case they were contracted almost to pinholes before the abdomen was opened, and remained so for a fortnight afterwards, just as though the patient were under morphine. Theodore Fisher, however, doubts whether the tumour in this case was a true pancreatic growth and not a peritoneal sanguineous cyst. I cannot find any more facts of general value in respect to this question of the pupil in the disease under consideration.

ABSENCE OF GLYCOSURIA.

The urine was perfectly normal before and after operation. I have no time to dwell on that deep physiological question—the relation of diabetes to pancreatic disease. Sugar may be absent in the urine when much of the pancreas is taken up by the cyst. On the other hand, Horrocks, of Bradford, recently observed glycosuria in a man, aged 56, who died of exhaustion. A large cyst occupied the site of the pancreas, no normal glandular tissue could be found, and the duct of Wirsung could not be entered by a probe. At the duodenal end of the cyst, however, a stone of the size of a pigeon's egg was felt loosely impacted in the contiguous common bile duct. Churton's case of pancreatic cyst with diabetes is better known. Very remarkable is Zweifel's experience. In his patient the urine was free from sugar when first examined, then he removed the pancreatic cyst. On the eleventh day sugar appeared in the urine and did not disappear for three weeks. In my own case the fæces throughout seemed healthy. The pulse, 84 before operation, was usually about 96 during convalescence. Perhaps the relative slowness before the cyst was emptied was due to irritation of the vagus from pressure on the solar plexus. There was never any dislike to fats or any other article of diet.

INJURY AS A CAUSE OF THE DISEASE: EPIGASTRIC PAIN AS A DIAGNOSTIC FEATURE.

The history of melancholia is of interest, as depression is noticed in cystic disease of the pancreas. The chief importance of this complication, in my own case, lies in the possibility of injury during one of the attacks of restlessness from which the patient

suffered at the same time. The relation of pancreatic cysts to injuries of the pancreas is well known, but time will not allow me to discuss it. I failed to trace any history of direct violence as is common in the blood cysts of the lesser cavity of the peritoneum, so well described by Theodore Fisher and Jordan Lloyd.

On the testimony of her relatives the patient suffered from fits of spasmodic pain, as I have stated. She denied that she ever suffered, and it was not till after the operation that I, with the assistance of Dr. J. Williams, learnt the truth. Her declaration that there had been no pain misled me. We know, however, that pancreatic cysts do not always cause marked pain. On the other hand, other rare tumours in the upper and middle part of the abdomen are painful. In the case of Gooding, of Cheltenham (a cyst of the great omentum), there was sickness and occasional vomiting after meals, and a great deal of shooting and aching pain in and about the tumour. Precisely the same symptoms have been noted in patients with pancreatic cysts.

The patient had gained flesh shortly before the operation, which in itself would seem remarkable, since the cyst had a broad attachment near the head, and was of considerable size. Emaciation is seen under such circumstances, and is observed when a large blood cyst presses on the pancreas. I will dwell no longer on this symptom, however, as I think it of little value in this case. The gain of flesh was due no doubt to the disappearance of the mental depression which had troubled her previously.

BROAD-BASED TUMOURS MAY FEEL MOVABLE : FLUCTUATION.

The tumour could be moved laterally, yet its base was fairly broad, and there was no pedicle. Similar lateral mobility, however, is seen in perfectly sessile broad ligament cysts, which rise high out of the pelvis, especially when they are not very tense. The majority of pancreatic cysts appear to be movable. Fluctuation was marked, and Heinricius finds that this symptom is the rule, though Treves declares that "fluctuation is very seldom to be obtained."

TAPPING OBJECTIONABLE, EVEN FOR DIAGNOSIS.

I repeat that I strongly object to paracentesis in cases of doubtful abdominal tumour. I have seen fatal results even where the greatest skill and care had been at the patient's

disposal. Experience shows that should the tumour prove to be a pancreatic cyst, the danger is considerable. Churton demurs to treatment by incision in diabetic cases, and prefers aspiration, "even if requiring repetition." "Diabetic patients," he writes, "are more likely to become a prey to septic infection, as happened in the present case." I cannot agree with such an opinion. Dr. Churton's case lived a year after incision of the cyst. On the other hand, I should feel inclined to leave alone altogether one of these diabetic cases—at least, until Dr. Churton or some other able physician had cured the diabetes. Again, in Karewski's, Le Dentu's, and Jacobson's cases the stomach was inadvertently perforated by the aspirator. Such an accident is best avoided, even when we know that, as in Annandale's case, aspiration may ensure accurate diagnosis. Escape of cyst contents may cause severe symptoms, as in the case of McPhedran (Toronto), where an incision was made and the abdominal wound closed without drainage—a practice even more dangerous in cases of this disease than aspiration. Senn's theory—that normal pancreatic juice cannot hurt the peritoneum—does not apply here, for the juice is seldom if ever normal in a cyst, though it often becomes so after draining.

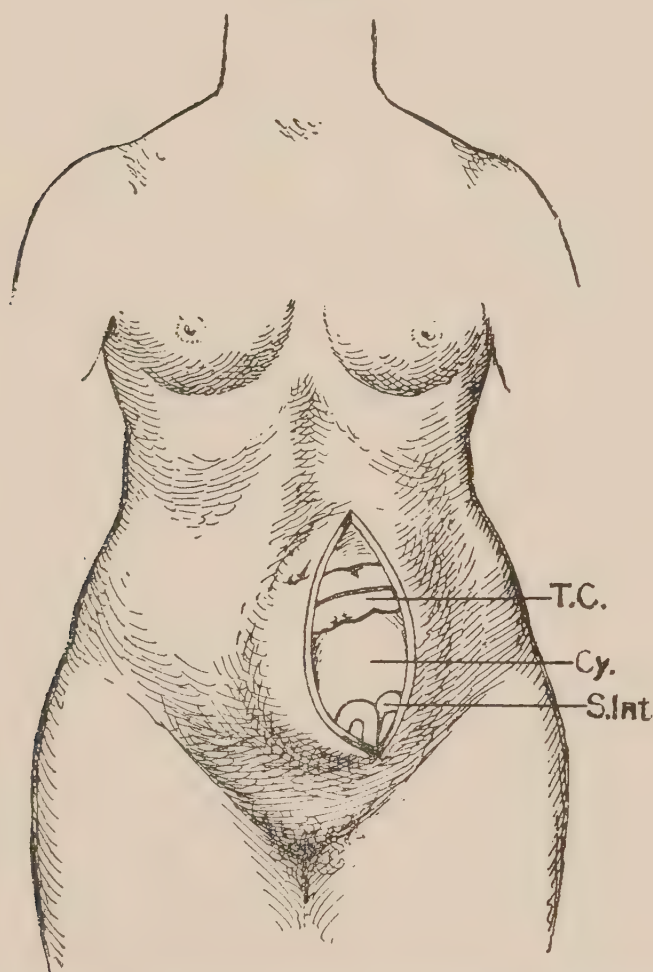
DILATATION OF VESSELS OF GREAT OMENTUM.

The extreme dilatation of the vessels of the great omentum, entirely below the tumour, was remarkable. Theodore Fisher has already noted that they are often enlarged in pancreatic cystic disease, and in cases of blood cysts of the lesser peritoneal cavity (Jordan Lloyd, Case 2). On the other hand, cysts of the great omentum do not appear to involve dilatation of its vessels. There was no dilatation in Simon's case, in Sir Spencer Wells's case (where I assisted), nor in Dr. Bantock's, which I described 16 years since; nor is this condition noted in Gooding's, Ormsby's, or Hearn's cases. In Hearn's and Ormsby's the cyst was multilocular (indeed there was solid matter in Ormsby's cyst), so the vessels were probably dilated to a certain extent. In my case of pancreatic cyst, the great omentum was otherwise quite healthy. The omentum does not become liable, when a pancreatic cyst develops, to disseminated fat necrosis such as Körte has seen in suppurative pancreatitis.

SURGICAL IMPORTANCE OF DEFINING PERITONEAL RELATIONS.

The relation of the cyst to the adjacent peritoneal folds is one of the most interesting features in cases of this kind; but as a general subject it is so well known that I need not dwell on previous experience at any length. Hersche in his commentary on Von Hacker's case (Fig. 3) gives the best description of the

Fig 3.



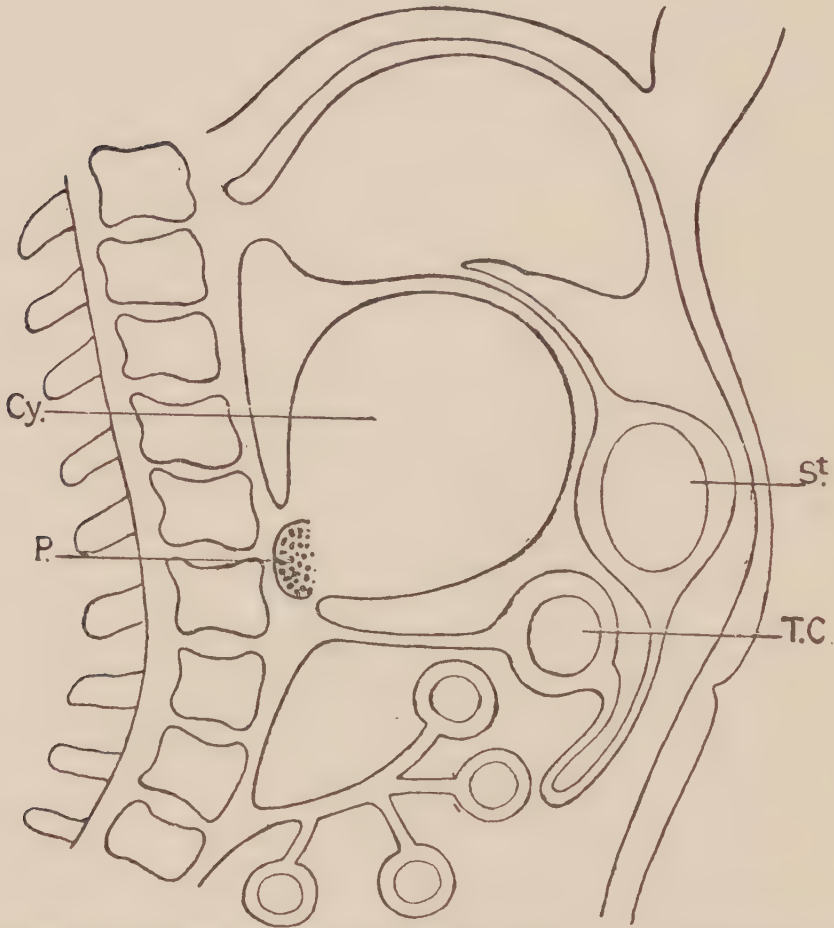
Parts exposed at operation. Von Hacker's case (after Hersche). The transverse colon (T. C.) lies on the top of the cyst (Cy.), which is invested in front by the descending layer of the transverse mesocolon. The small intestines (S. Int.) are seen below the cyst. (See Fig. 7.)

different ways in which a pancreatic cyst may displace the peritoneum.

First, the cyst may project into the lesser cavity of the peritoneum, pushing forward the lesser omentum. The stomach will then lie on the lower part of the front of the cyst (Fig. 4).

This is the highest position, in respect to peritoneal folds, that a pancreatic cyst can occupy, and it is a rare position. Hersche and Heinrichius can only find a few examples (Riegner, Karewski). My own case comes in this class. What settled the class in the case under discussion was the fact that not only did I see the lesser omentum and stomach on the face of the cyst,* but I found the upper part of the great omentum ("gastro-colic ligament")

Fig 4.

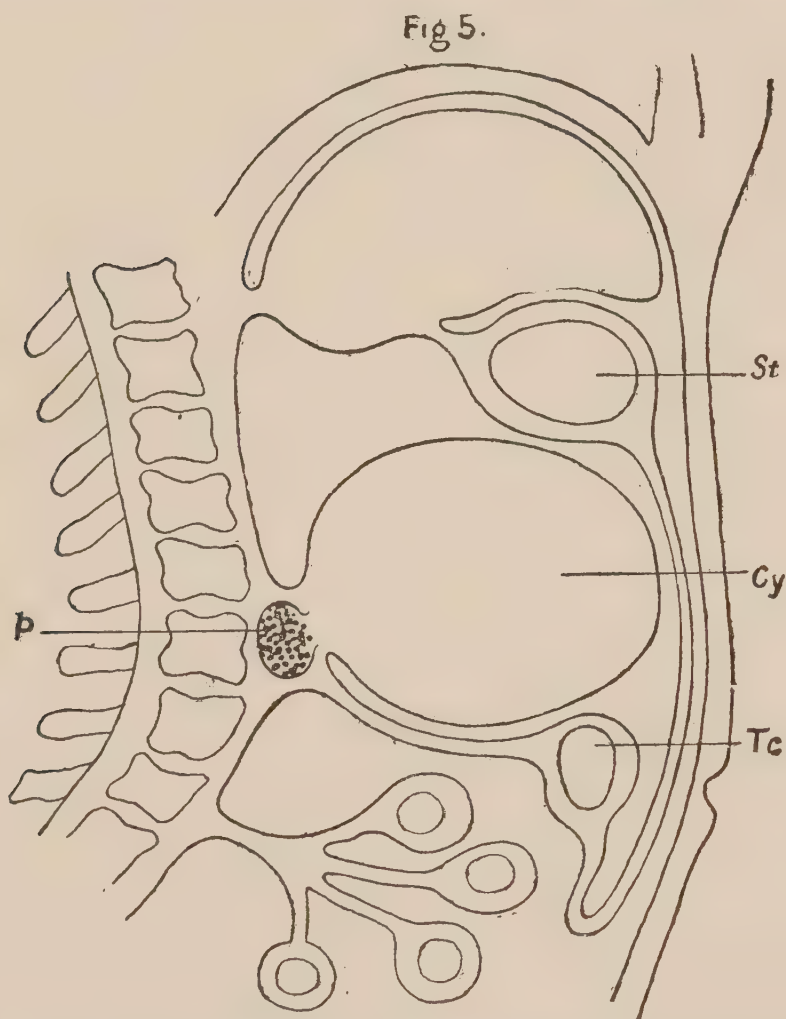


Pancreatic cyst in lesser cavity of peritoneum. The anterior aspect of the cyst bears the lesser omentum and stomach as part of its capsule. (Author's case; see Fig. 2.) P., pancreas; Cy., cyst; St., stomach; T. C., transverse colon. (Figs. 4 to 8 are after Hersche and Heinrichius.)

hanging freely from the lower border of the stomach, which precisely corresponded to the lower border of the cyst, and I noted that the transverse mesocolon passed entirely under the tumour.

* The surgeon must remember that when writers speak of the stomach, colon, &c., lying "on" a pancreatic cyst, they mean that these viscera actually form part of its capsule, as the colon does in a large renal cyst.

More frequently, when the lesser cavity is occupied by the cyst, the great omentum, especially its gastro-colic portion, is stretched forwards, then the stomach lies on the upper part of the front of the cyst (Fig. 5, McPhedran's case). Sometimes the transverse mesocolon is opened up. Then, as Hersche has lucidly demonstrated, if the layers be opened up evenly, the colon must lie across the middle of the cyst. He notes, however, that experience shows that the layers tend to get opened very unevenly. Then

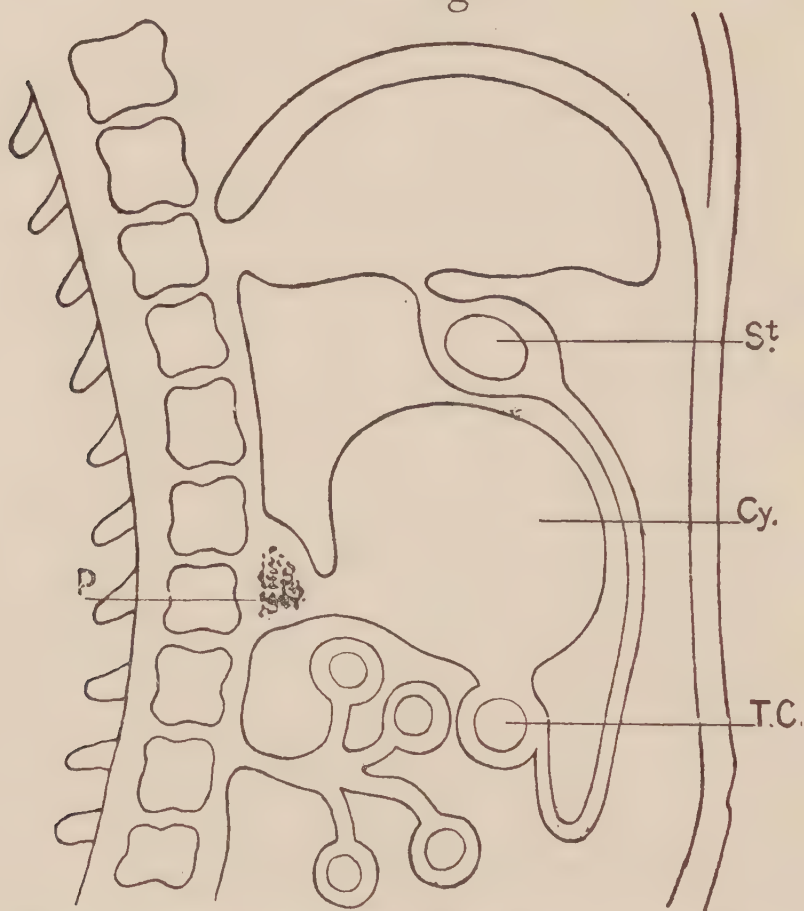


Pancreatic cyst in lesser cavity of peritoneum, but lower than in Fig. 4, the stomach investing its upper part. (McPhedran's case.)

when the upper layer of the transverse mesocolon is invaded, the transverse colon must lie on the lower part of the front of the cyst (Salzer's case, Fig. 6); if the lower layer be principally involved, the colon, as in Von Hacker's case, will be found on the upper part of the front of the cyst (Fig. 7). This latter form, as Hersche shows, is rare. Lastly, the lowest position for the cyst

is in the general peritoneal cavity below the lower layer of the transverse mesocolon (Fig. 8). Heinrichs declares that his second case was of this class; in another instance (Shattock and Bernard Pitts) the true mesentery invested the front of the cyst. The colon and its mesentery lay free from the cyst and far above it, as in my case they lay free from the cyst and well below it. Thus Hersche's simple demonstration will always aid the operator if he bear it in mind, and will make much handling unnecessary.

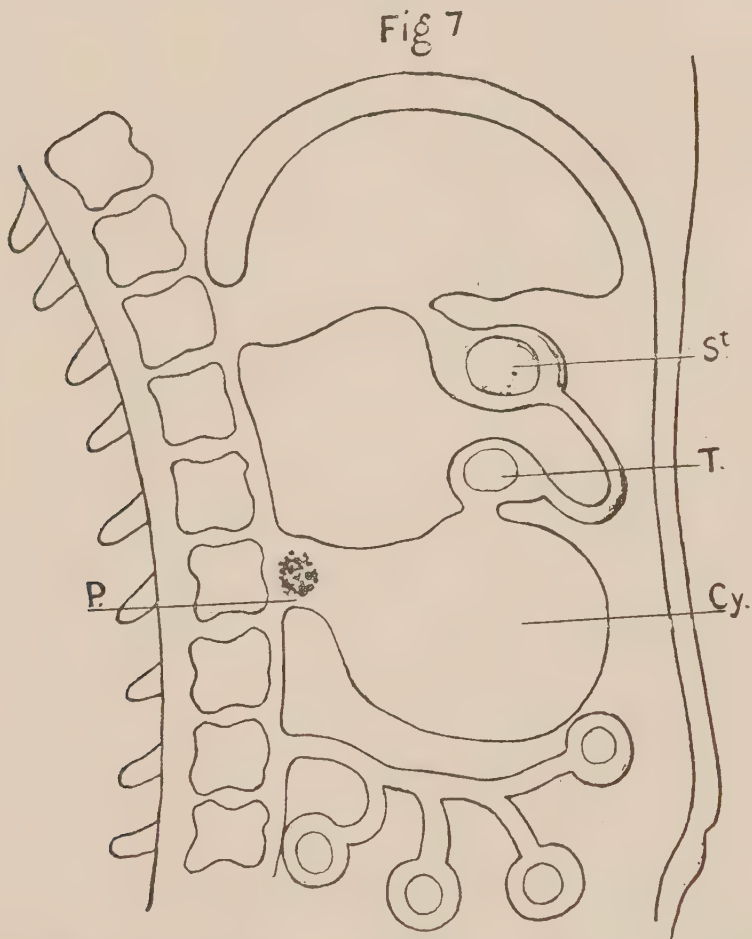
Fig 6



Pancreatic cyst, chiefly invested by the upper or ascending layer of the transverse mesocolon. The colon lies low on the anterior aspect of the cyst. (Salzer's case.)

The relations of the cyst to the peritoneum anteriorly were very evident in my case. As to posterior relations, I suspect that growths of this kind sometimes burst through the peritoneum in front of the pancreas so that their outer wall lies free in the lesser peritoneal cavity. Körte and others have shown that rupture of the peritoneum seems common when effusions due to pancreatitis (Körte) or hæmorrhage (Jordan Lloyd) near the pancreas press

forwards. Very probably a cyst sets up inflammatory irritation at first, and then perforates the peritoneum. This would account for the occasional freedom of the ascending layer of the transverse mesocolon from any part of the cyst, as I observed at my own operation. Let us remember the relation of the body of the pancreas to that fold, and also bear in mind Hersche's demonstration that the same layer has been known to form the capsule of the cyst, the colon being then stretched over the lower part of the



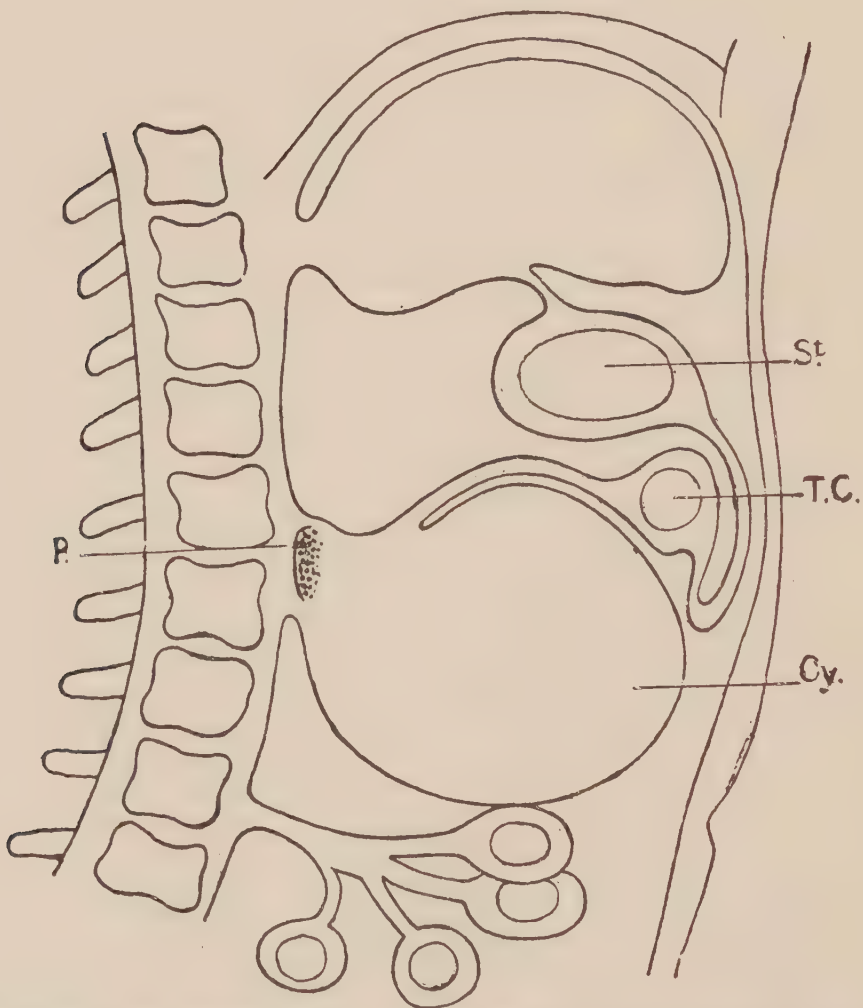
Pancreatic cyst, chiefly invested by the lower or descending layer of the transverse mesocolon. The colon lies high on the anterior aspect of the cyst. (Von Hacker's case; see Fig. 3.)

cyst wall. It is difficult to see, then, how a cyst could avoid pushing forwards the ascending layer of the transverse mesocolon unless it perforated the peritoneum, actually in contact with the pancreas, at a very early stage of its development. A cyst might push forward the peritoneum above the pancreas if it arose entirely from the upper margin of that gland, but in my case the cyst was fixed by a broad attachment to the anterior aspect of the pancreas.

THE WALL OF THE CYST.

I have little or no doubt that the wall of the cyst was a true wall, and not a product of inflammation. I did not cut away a portion for microscopic examination as I was specially anxious not to let a drop of fluid escape into the peritoneal cavity. We all know that these cyst walls sometimes contain pancreatic glandular tissue, a proof that they arise from the pancreas and not from organisation of lymph around blood after injury, or

Fig 8.



Pancreatic cyst in the general peritoneal cavity, entirely below the transverse mesocolon.
(Heinricius's case.)

inflammatory products after pancreatitis. The cyst wall simply carries many normal acini along with it as it grows. In this way we can understand why it is often cured by drainage, which would only stimulate the growth of neoplastic adenomatous tissue in a cyst wall. In Pearce Gould's second case, evidently malignant, this

kind of growth possibly existed. But the experience of draining and of extirpation shows that pancreatic cysts are usually of a simple type, and therefore destitute of elements with proliferating power. The traces of glandular tissue detected by Cibert, Heinrichius, and others may be pathologically similar to the Wolffian elements which Von Recklinghausen detected in the walls of the Fallopian tube and uterus in very old subjects. They are foetal relics which probably exist in all women, yet rarely burst into growth. The glandular tissue in the wall of a pancreatic cyst probably lies latent in the same way, though something more than a foetal relic.

The microscope has been so freely used by competent authorities that the pancreatic origin of the cyst wall itself cannot be doubted. Hence I need dwell no further on the pathology and causation of these cysts as compared with sanguineous effusions, merely observing (since peritoneal relations are so important to the surgeon) that neither can open up the layers of the great omentum in an adult, as some writers seem to believe, since those layers are obliterated early in life.

LUMBAR DRAINAGE NOT ALWAYS PRACTICABLE.

The base of the cyst, in my case, did not reach either loin. Thus it would have been useless to tap or drain through the loin, as Pearce Gould and others have done. In Gould's case, where the patient was of the same age as mine, the tumour, which had no defined cyst wall, projected in the lumbar region. Gould recommends drainage from the loin whenever the cyst can be easily pushed to below the twelfth rib, but it should be first explored from the front, and R. Leith, who gives valid reasons for preferring lumbar drainage as a rule, admits that anterior incision and drainage are good in movable cysts which come well forward.

ON DEFINING ATTACHMENT OF CYST AT OPERATION: QUESTION OF CALCULI.

The base of the cyst was sessile, involving the body of the pancreas immediately to the left of the head. About a quarter of the recorded cases are thus inserted, the great majority being attached to the tail (Nimier). I explored the cyst from outside, and easily made out its relations. I did not deem it safe to

examine the interior. The insertion of a pancreatic cyst is often easily definable from without (Steele, of Chicago, and others), whilst searching from within for a calculus (Roswell Park) is barely worth the risk. In the Bernard Pitts and Shattock case the calculi lay in a loculus, not in a duct opening into the cyst—the ideal theoretical position for obstruction. Let it be remembered that even in a necropsy the relation of a pancreatic cyst to the normal duct is often difficult to demonstrate. In Railton's infant nothing more was found than a dimpling of the inner surface of the cyst at the site of attachment to the pancreas. In Mériqot's well-known case, where a blood cyst primarily or otherwise connected with that organ absorbed part of its body by pressure, "the principal pancreatic duct was longitudinally incised, and then found to disappear in the wall of the tumour . . . where it was lost." * These conditions could not be detected by any amount of searching inside a cyst at an operation. In Durante's case the cause of obstruction was an ascaris in Wirsung's duct, but it was not discovered till after death.† An ascaris might easily escape the most careful search at an operation, besides experience shows that the cause of obstruction was quite exceptional in this case. Above all, pathology teaches that this calculus hunting, recommended in some systematic works, is a wild-goose chase. Mr. Targett, as well as Drs. Goodhart and Theodore Fisher, are all opposed to the theory that a pancreatic cyst is usually due to blocking of a duct by any agency. On the other hand, the risks of handling the interior of a pancreatic cyst are not visionary, for it is liable to slough (Wölfler, Karewski, Hersche).‡

* I have taken the above quotation from the author's own report ("Kyste hématique de l'abdomen, situé entre le pancréas et l'estomac: laparotomie, mort, autopsie," Mériqot de Treigny, 'Bulletins de la Société Anatomique de Paris,' vol. ix, 4th series, 1884, p. 428).

† This remarkable case was imperfectly reported in Italian and German journals. Professor Durante kindly sent me his original memoir (*see Bibliography*). At a point where an attempt had been made to detach the cyst from the pancreas, "si vede pendere in corrispondenza del dotto Wirsungiano un corpo rotondo riconoscibile . . . per l'avanzo di un ascaride."

‡ In Von Hacker's case, where much sloughing followed drainage, the process probably began before the operation, where the cyst wall was found very friable and the cavity full of broken-down material.

OBJECTIONS TO TOTAL REMOVAL OF SESSILE PANCREATIC CYSTS.

Finding that the base of the cyst had a broad attachment to the body of the pancreas near the head and no pedicle, I did not attempt the total removal of the tumour. I objected to face the self-evident risks of a radical operation when I knew that drainage answers very well, and is attended with little peril.

The surgeon must not in dealing with these purely cystic tumours dwell too much on cases of solid growths of the pancreas, which have been successfully removed by Sendler, Ruggi, and possibly Pearce Gould. The tumour in the latter case is now in the College of Surgeons (Pathol. Series, 2,354 C), but was apparently confined to the lesser omentum.* These solid tumours, if not left alone altogether, must be taken away. Krönlein removed very rightly an angio-sarcoma "as big as a fist." The patient did well for a few days, but died on the seventh from gangrene of the transverse colon due to ligature and division of the colica media artery near its roots.

Extirpation of a cyst of the pancreas is, on the other hand, not essential to cure. Poncet admits that his own successful experience was not encouraging, and in that case the base was attached to the tail of the pancreas, the most favourable position for a radical operation. Seven pairs of forceps were left projecting from the abdominal wound, besides another of larger size fixed to the pedicle. On the second day the seven were removed. On relaxing the big forceps blood freely rose out of the wound, so it was tightened again and the bleeding ceased. It was removed on the seventh day, and free discharge of foetid pus followed. On the fifteenth day the temperature was 104°, and not till a day later could the Mikulicz drain, inserted at the operation, be removed, as the least handling set up dangerous bleeding.

Another latter-day operator, Heinricius, of Helsingfors, who has twice successfully removed a pancreatic cyst, frankly admits that the operation is not always practicable or justifiable. In his first case the base of the cyst stretched like a pedicle from the pancreas, and was treated as such by double transfixion with stout silk and divided, leaving on retraction a cut surface as large as a

* The report of this successful case will, Mr. Gould informs me, be duly published.

florin. In the second the patient was pregnant, and the tumour diagnosed as ovarian. After enucleation from its peritoneal capsule, the base was found inserted on to the pancreas. It was ligatured with silk and divided; then, as the pancreas fell back, severe hæmorrhage took place from several points in its tissue, and ligatures had to be applied by means of curved needles (*Umstechung*). The risk of this necessary manœuvre is self-evident to all who remember the relations of the pancreas. The patient recovered, and was delivered of a live child five months later. In Paul Eve's (of Nashville) case, which must be studied from the original report, "a short pedicle was found attached to the body of the pancreas close to the head of this organ." The transverse colon and mesocolon were torn. The pedicle was "easily treated by a Staffordshire knot, and a portion of the pancreatic substance removed with the pedicle. There was but little or no hæmorrhage during this operation, and no other ligatures were required." The omentum was fixed to the denuded colon. Recovery was rapid. The extirpated cyst grew from the tail of the pancreas—a favourable position, in cases where the operators were Poncet, De Wildt, Zweifel, Clutton, Mikulicz, and others. My colleague, Mr. Malcolm, will presently report a case of this kind. Kosinski's case is imperfectly reported.

The danger of extirpation lies chiefly in the size and at the same time the difficult accessibility of the important blood vessels lying near the pancreas. What happened in Krönlein's case might occur in removal of a cystic tumour. In one of Mikulicz's two cases the splenic artery was incorporated with the cyst wall, and had to be divided and ligatured. De Wildt had to tie the splenic vein, which proved difficult. Bozeman had a relatively easy experience: the artery in the pedicle was as large as the brachial, but was secured in the pedicle ligature, no other ligature being required. In Mr. Clutton's well-known case, where a portion of the pancreas had to be excised with the cyst, "the cut surface of the gland required many ligatures to arrest bleeding, and even then it continued to ooze, apparently on account of its friable nature, which made it difficult to apply a ligature without tearing some of the surrounding tissue." In Billroth's case both the splenic artery and vein were tied, and the patient died on the tenth day.

Now, it is questionable whether the surgeon ought to perform

an operation where the splenic artery may have to be tied whilst simple drainage answers so well. The artery, however, can be seen, though it lies so deep in the abdomen. Unfortunately, free bleeding from the surface of the pancreas required in several of these cases ligature by means of curved needles. This practice (*Umstechung*), so valuable in pelvic surgery, is not always safe even in the pelvic region, for the ureter may be tied and large vessels wounded. In the vicinity of the pancreas the danger is even worse, and manipulations are much more difficult.

Out of about a dozen reported cases—I speak indefinitely, as Kosinski's at least is doubtful—two died, though neither of these were recent. Several were believed to be cysts of other organs—Von Hacker, Heinricius, &c., “ovarian cysts”; De Wildt, “hydronephrosis”^{*}—and the final step was taken when it was too late to do anything else. For partial excision of the cyst is questionable; though, out of eight cases, the three deaths all occurred over 10 years since. I am, however, exceedingly sceptical about the completeness of these reports. To my knowledge more than one fatal case has not been published. Sir Spencer Wells removed a pancreatic cyst in 1877, and I made a *post-mortem* examination a few days later. Death was from sepsis, not from hæmorrhage. A portion of the base of the cyst was left on the body of the pancreas.[†]

Thus some bold surgeons have succeeded in extirpating more or less sessile pancreatic cysts, nor will I deny that, for reasons some of which have been given, their operations in particular were justifiable. Certainly they were triumphs of skill. In general, however, I consider that when a pancreatic cyst is distinctly sessile extirpation is unjustifiable, and it did not seem advisable in my case. The base was very broad. A fistula is not a very serious after-result, yet it seems about the worst likely to occur if drainage be properly managed. Nor do such cases suffer after the fashion of patients with biliary fistula.

^{*} The true nature of the cyst was not recognised until it was drawn out of the operation wound, and the tail of the pancreas was seen to run into its base.

[†] In his last work, ‘Diagnosis and Surgical Treatment of Abdominal Tumours,’ 1885, Sir Spencer Wells writes (p. 206): “But pancreatic cysts must be very rare, as I have never seen one.” He informed me afterwards that he had made an oversight.

DRAINAGE AND ITS EFFECTS.

I determined, therefore, upon thorough drainage, with precautions. It may be asked why a pancreatic cyst should be touched at all. The chief reason for operation is that fatal rupture may otherwise occur (Boeckel). In Dr. T. Savill's case the precise nature of the disease was doubtful. Fatal hæmorrhage is not unknown (Bécourt). Reddingius related in 1892 a case of fatal peritonitis from sloughing of the cyst and escape of its contents; and here the patient was, like mine, an active young girl exposed to injuries. Again, the cyst may become of inconvenient size, as in Martin's case, left alone for 17 years.

Lastly, experience shows that incision and drainage performed with ordinary precautions give almost uniformly good results. Out of about 70 published cases of incision and drainage only five died, excluding one of Pearce Gould's cases that lived four years afterwards, when cancer appeared. Hartmann's died in six weeks of cancer, which must have existed at the time of operation. Richardson lost a case from perforation of the stomach six months after operation; it was of traumatic origin. Reeves's patient died of a low fever of uncertain origin nearly five months after incision. Durante's case does not come strictly under this head, as part of the base was detached at the operation. Bull's patient was diabetic, and he did the operation in two stages. The recovery of over 60 cases is, I admit, remarkable. Some at least of these pancreatic cysts bear not only secondary cysts, but also distinct glandular elements in their walls.* An ovarian glandular cyst would only be made worse by such treatment. The truth remains, however, that drainage cures pancreatic cysts, for reasons which I admit are by no means evident. The cyst in my case was small after it had been tapped, and needed no trimming as in Bernard Pitts's two cases. The precautions which I took to avoid fouling of the peritoneum and to fix the cyst securely have been sufficiently described, and I need not dwell on the dressing. Sulphurous acid is a very good stimulant.

The contents of the cyst were certainly mixed with broken-

* In a case where Mr. Bernard Pitts drained after incision, the cyst was actually multilocular. One cavity contained calculi. Mr. Pitts kindly informed me (October 12th, 1897) that a sinus remained for a few months, but ultimately closed.

down constituents of blood and something like tyrosin, and the discharge remained very composite for a few days, then pure pancreatic fluid escaped, as has been observed before; later on the natural secretion was fouled with pus from granulations. The elements of blood are common in old cysts in any region, and do not necessarily imply in this case that the disease was primarily an effusion of blood.

Although my patient had a very tender skin, and was worried with urticaria, the flow of pancreatic juice, fairly free at one time, never set up irritation of the surrounding skin, though it ran from June till about the 1st of October. In some cases the discharge remains bland for several weeks, and then becomes irritant (McPhedran), probably because it is at first diluted with serum or blood, and later becomes charged with an extra strong proportion of digestive principles. In cases like my own, though the discharge was pancreatic fluid, and was amylolytic, it must have been too weakly charged with those principles to damage the skin.

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A CASE OF PERIPANCREATIC CYST WITH JAUNDICE: OPERATION; RECOVERY.

By H. D. ROLLESTON, M.D., F.R.C.P., and G. R. TURNER, F.R.C.S.

A MAN, aged 30, was admitted into St. George's Hospital on May 10th, 1897, with deep jaundice and pain in the epigastrium. For six months he had had more or less constant pain across the epigastrium, which at times became exaggerated during the night. This pain was relieved by free purging during the first two months. For three months he had been jaundiced, but the motions had been noticed to be clay-coloured for a longer period, viz., five months. There had not been any vomiting, and there was no absolute evidence that he had ever had an attack of biliary colic. There was no history of a blow on the epigastrium preceding the

development of the symptoms. Syphilis had been contracted when 15 years old, and for the last seven years the patient, a barman, had taken whisky freely, and it is therefore quite conceivable that he may have received a blow on the abdomen without being fully cognisant of it.

On admission the patient was of spare habit, deeply jaundiced, and complained of pain over the epigastrium. The skin itched considerably, but this was subsequently relieved by treatment with calcium chloride. There were no hæmorrhages. The bowels were confined; the pulse 64, regular; tongue furred; temperature normal. The urine contained bile, no albumen or sugar. In the epigastrium and umbilical region there was a large, tense rounded tumour, which was separated from the liver by a band of resonance. It descended on respiration, but could not be easily displaced. Although it was not in absolute continuity with the hepatic dulness, it was thought that the tumour was probably a dilated gall bladder, or possibly an hydatid cyst dependent from the under surface of the liver. The suggestion of its being a pancreatic cyst was made, but seemed improbable from the presence of jaundice, which is hardly ever seen in association with that condition. The jaundice showed that the biliary system was involved, and the presence of a cystic tumour near the situation of the gall bladder, although it did not exactly correspond with it, seemed to render it probable that it was that organ. If, as has been directed by many authors, the stomach had been artificially distended, its position in front of the cyst would have shown that the tumour in question was not the gall bladder but a more deeply-seated structure. As to the cause of the jaundice there was considerable difficulty in coming to a decision. Cholelithiasis, being the commonest disease, suggested itself, but the gall bladder is then, as a rule, atrophied rather than dilated. The possibility of syphilitic formations compressing the ducts was thought of, and iodide of potassium was given. But as no improvement took place, and the man was urgent that something should be done to relieve him, he was seen by Mr. G. R. Turner in consultation, and it was decided to do laparotomy with a view of clearing up the diagnosis and relieving the pain and jaundice.

On May 24th, 1897, Mr. Turner operated on the patient. An incision was made in the middle line over the prominence of the tumour and the abdomen opened. The stomach and transverse

colon were seen to be pushed forward, by a cystic tumour presenting a brownish-blue appearance, through the great omentum just below the stomach. The cyst was tapped about three-quarters of an inch below the great curvature of the stomach and its contents aspirated. They consisted of about 30 ounces of brownish fluid.* The aspirator puncture was subsequently enlarged sufficiently to allow the finger to be introduced. The cyst extended backwards to the pancreas and vertebral column and had no solid contents. The margins of the opening were stitched to the abdominal wound, which was closed by silkworm gut stitches and a drainage tube inserted. The after-progress of the case was uneventful, the discharge from the wound gradually lessened and lost its colour, some clear watery fluid coming away, but not in sufficient quantities to allow of chemical examination.

The anatomy of the cyst appeared to be precisely similar to that of one operated on by Mr. Turner in 1894, and reported in 'The Lancet,' 1896, vol. ii, p. 25. In both the stomach and omentum were adherent to the cyst wall, or what appeared to be the cyst wall; for it is difficult in these cases to be sure that one is dealing with any cyst wall other than that made by the peritoneum.

The considerable quantity of blood and the absence of any positive chemical evidence that the contents of the cyst were derived from the pancreas, render it perhaps more probable that the cyst was due to hæmorrhage and effusion in the immediate neighbourhood of the pancreas. But how this was brought about there was nothing to show. There was no definite history of traumatism. It may, as in McPhedran's† case, have been due

* Dr. Arthur Latham kindly examined the fluid removed at the operation, and reported that it was "A dark-brown fluid of sp. gr. 1010, containing numerous red and white blood corpuscles. A large quantity of blood clot was deposited after the fluid had been standing for 24 hours. The colour was not due to bile pigments but to methæmoglobin. No leucin, tyrosin, or other crystals were found. The fluid did not digest fibrin in an alkaline solution. Owing to the large quantity of blood deposit no analysis of the albumens present was made, nor was it ascertained whether the fluid possessed the property of emulsifying fat; for, as V. Jaksch points out, this is of little diagnostic value. So far as this analysis goes, there is nothing to support the diagnosis of a pancreatic cyst; on the other hand, there is nothing to negative such a diagnosis, for the larger and older the pancreatic cyst the less does the fluid obtained from it conform to the characteristics of pancreatic juice."

† McPhedran, 'Trans. Assoc. Am. Physicians,' vol. xii, p. 61.

to pancreatitis or have been an example of the hæmorrhagic peritoneal cysts described by Theodore Fisher.* At any rate, it was peripancreatic in position, and, like so many of these cases, it is difficult to go further.

A point of considerable interest is the presence of persistent jaundice. This was relieved after tapping the cyst, and was presumably due to pressure directed on the bile ducts by the cyst.

It is also noteworthy that the fæces were described as clay-coloured for two months previous to the appearance of jaundice; this absence of colour from the fæces has been described by T. J. Walker† in cases of obstruction of the pancreatic duct.

A CASE OF COMPLETE REMOVAL OF A MULTILOCULAR CYST OF THE PANCREAS; RECOVERY.

By JOHN D. MALCOLM, M.B., C.M., F.R.C.S. Edin.

I WAS asked by Mr. Manley Sims to see the subject of the following notes on October 5th, 1897. The patient, a married woman, 49 years of age, had first noticed a swelling in the abdomen about seven months earlier, her attention having been drawn to the part by a slight tenderness. She stated that the swelling had grown very rapidly. By palpation with one hand behind and the other over the front of the abdomen a growth was easily felt in the left loin. It appeared to be from 5 to 6 inches in diameter, and of a more or less uniformly rounded shape. Its greatest bulk was below the costal margin, but it was freely movable and could be pushed with particular ease upwards and backwards, until about three-fourths of it were overlapped by the ribs. The percussion note over the upper part of the anterior and outer aspects of the growth was dull; over the lower and inner parts the note was resonant. The percussion note was slightly duller over the ordinary position of the spleen than over the neighbouring lung tissues, this impaired resonance being quite separate from the abnormal dulness over the tumour in the abdomen. The right kidney was palpable and appeared to be of normal size and somewhat movable. The tumour had no connection with the pelvis. Mr. Sims had repeatedly examined the

* T. Fisher, 'Guy's Hospital Reports,' 1892.

† T. J. Walker, 'Trans. Roy. Med. Chir. Soc.,' vol. lxxii, p. 257.

urine, and had invariably found it free from albumen and sugar. In all other respects the patient was perfectly healthy and there was no history of any injury. During her first pregnancy she suffered from severe eclampsia, for which Dr. Champneys induced premature labour. The child lived, and subsequently two other children were born without trouble of any kind. The patient had lost flesh to some extent but she was very well nourished and had been doing her best to reduce her weight. The family history threw no light on the nature of the tumour.

I believed the growth to be renal. I thought it was solid, and I inclined to the opinion that it was a sarcoma. It was arranged that another consultation should take place a month or six weeks later, and that in the meantime the patient would not take violent exercise or expose herself to any avoidable risk of injury. The patient was also seen by Dr. Champneys and Mr. Frederick Treves with Mr. Sims, and early in November we all met in consultation. The tumour was not larger then; if anything, I thought it smaller and more mobile than before. It was much softer and there was little doubt that it contained fluid. The patient had increased in weight by 4 lbs. I at once gave up the diagnosis of sarcoma, and we all agreed that the growth was most probably a hydronephrosis, although it was remarked that the diagnosis was not absolutely certain and that the possibility of the tumour being a neoplasm was an additional reason for recommending operative treatment. I have to thank my fellow consultants for allowing me to mention their names in connection with this case; that we should all four have been at fault is sufficient evidence of the difficulty of making a correct diagnosis. On the assumption, then, that we had to deal with a hydronephrosis the risks of removal of the kidney and the risks of leaving it alone were placed before the patient and her friends, and it was decided that it should be removed.

On November 9th, in the presence of Mr. Manley Sims, I opened the abdomen by a vertical incision about 2 inches to the left of the middle line, and ascertained that the right kidney was of normal shape, size, and consistence, quite smooth on its surface, and slightly more mobile than usual. The tumour was larger than I had supposed, and more irregular in outline. The transverse colon lay in front of it. Above the colon the tumour was covered by peritoneum and connective tissue. In cutting down on the

growth I seemed to divide one layer of peritoneum only. Apparently the tumour presented itself outside—*i.e.*, to the left of—the lesser sac of the peritoneum. The kidney was afterwards found immediately behind the cyst, and the lesser sac of the peritoneum was not opened. A very thin-walled and obviously multilocular cyst was exposed, some of the loculi being of a deep venous blue colour and others almost white. The tumour had more the appearance of one of those rare congenital cystic degenerations of the kidney than anything else I had seen in this part of the abdomen. After enucleating the anterior part of the growth I aspirated and drew off about three-quarters of a pint of dark porter-like fluid, and on pushing the cannula into another cyst a few ounces of opaque, straw-coloured, almost white fluid were extracted. Having secured the puncture opening made by the trocar, I enucleated the tumour until I was able to bring the bulk of it outside the abdominal walls. The smooth surfaces of the cyst were easily shelled out of the connective tissue, but the lines of union of the cysts were firmly adherent, and had to be separated by scissors. In enucleating the base of the growth I noticed that the tail of the pancreas was closely adherent to its inner surface. As in the case operated on by De Wildt and referred to by Mr. Doran,* it was only when the pancreas was seen that the true nature of the tumour was discovered, De Wildt's case having also been mistaken for a hydronephrosis. As the tumour was very multilocular and appeared to have solid portions in it, which, however, afterwards proved to be small cysts, and as its growth seemed to have been rapid, I thought it was probably of a malignant nature, and I considered it wiser to remove the tumour, if possible, than to drain it, especially as the exposed pancreatic tissue appeared to be quite healthy. The tail of the pancreas to the extent of about 2 inches was intimately connected with the tumour, but part of the attachment was by connective tissue only. The growth had developed from the upper and posterior surface of the pancreas, and a considerable portion of the cystoma had still to be enucleated from the back of the loin pouch. During the necessary manipulation a cyst burst in the deepest part of the growth and several ounces of dark-coloured fluid escaped. This was caught in my hand or in sponges by my assistant, Dr. Andrew Elliot, so that very little,

* *Ante*, p. 91.

if any, soiled the tissues. The posterior part of the attachment to the pancreas was so intimate that the pancreatic tissue had to be divided in order to get the tumour away. There was no pedicle, but when the connective tissue union between the gland and the tumour was separated, traction on the growth drew the pancreatic tissue forward so as to form a kind of cone through which I passed a double ligature. The two ligatures were carefully interlocked and tied, one on each side of the transfix piece of tissue. The growth was then cut away and I noticed a very large vessel about the size of the radial artery in the tied portion of pancreatic tissue. Numerous ligatures of fine silk were applied to the divided attachments which had been temporarily secured by pressure forceps. When all hæmorrhage appeared to be arrested the parts were allowed to drop into their proper position at the back of the abdomen and it was then immediately obvious that there was very free hæmorrhage. This was at once arrested when the parts were again drawn forwards, the traction being sufficient to occlude the vessels. Obviously it was not wise to transfix and tie large pieces of tissue, and for a short time I feared I should fail altogether to stop the bleeding. It was with the greatest difficulty that I managed to see the parts in a sufficiently relaxed condition to discover and secure an artery in the pancreatic tissue which spouted freely close to the portion tied by transfixion. The securing of this vessel reduced the hæmorrhage, but some oozing continued until, with a needle on a handle, I passed a continuous suture over another portion of raw pancreatic tissue from which the oozing seemed to come. By these means the bleeding was arrested so thoroughly that when I had inserted the sutures in the abdominal wall and had ascertained that the spleen and left kidney were present and apparently normal the divided tissues were still very dry. I therefore closed the abdominal cavity without drainage. I carefully noted that in case there should be evidence of an accumulation of any kind in the course of convalescence it would be very easy to drain the cavity from which the tumour had been removed through the back of the loin close to the twelfth rib.

During the first 48 hours after the operation the patient had a good deal of discomfort from flatulence, and towards the end of the first week she seemed more feeble than patients who have

undergone an abdominal section usually are. The highest temperature, taken in the vagina, was 102° F., recorded on the second night after the operation, and it was never above 100° after the eighth day. After the third week the temperature was normal. The highest pulse was 106, recorded the night after the operation. The urine passed in the first 16 hours contained albumen, more in the first specimen than later. Since then the urine has been free from albumen. Sugar has not been detected in the urine and there have been no signs of diabetes. There has been at times some tenderness in the situation of the tail of the pancreas which has been aggravated by the administration of food and relieved by antispasmodics. Otherwise convalescence has been uninterrupted. Mr. Shattock has kindly sent me the following description of the tumour, in which he finds "no evidence of malignancy": "A thin-walled cyst which was removed from the pancreas; it measures about 6 inches in its chief diameter and is multilocular. Some of the larger compartments communicate with certain of the lesser by circular, sharply-defined apertures, due probably to atrophy of the intervening partitions. The interior of many of the cavities is blood-stained from hæmorrhage. During the operation much of the fluid was withdrawn by aspiration from two of the chief loculi; that from one was quite clear, that from the other blood-stained. The somewhat ropy, dull-brown mixture of the two was found to be strongly amylolytic when tested on starch solution."

This case illustrates very well some of the features of pancreatic cysts. As in many of the others on record the nature of the tumour was not recognised before the operation. Indeed, it seems to me that a positive diagnosis could only have been made by withdrawing some of the fluid and examining it. This proceeding should never be resorted to except in cases in which an exploratory operation is not permissible on account of the debility of the patient. To put a trocar into an abdominal tumour of unknown nature may lead to dangerous hæmorrhage or to the escape of fluid into the peritoneal cavity, with the possibility that the escaping fluid may be intensely irritating. An exploratory puncture may also lead to the diffusion of septic matter or of malignant disease previously encapsuled, and there is in addition the risk of injury to important structures. In the case of pancreatic cysts, for instance, the stomach and colon have been found

so flattened on the front of the tumour as to give a dull note on percussion and the stomach has actually been perforated in aspirating one of these cysts. Any one of these dangers is of sufficient importance to outweigh all the advantages to be gained by puncture and to determine a decision in favour of performing an exploratory operation except under the most exceptional circumstances. Moreover, in the case I have related there is a strong probability that if a certain diagnosis of pancreatic cyst had been made by an exploratory puncture, or by other means, drainage through the loin might have been considered the proper treatment, and it is fairly certain that drainage would have done no real good in the case of a tumour with so many loculi. The error in diagnosis may therefore be looked upon as a fortunate circumstance in this case. I think there can be no doubt that when a pancreatic cyst has been diagnosed and drainage has been decided on the opening into the cyst should be made from the loin if the tumour presents in that position on either side. But the diagnosis should first be verified by abdominal section. Drainage through the loin is easy, and as the cyst contracts it naturally falls backwards and closes on the opening, whereas if the cyst be attached to the lips of an incision in the anterior abdominal wall and drained thus it must form a long, and perhaps a funnel-shaped tube across the abdomen, difficult to drain, and possibly a source of other troubles as it contracts. Some of the drained cases are reported as being cured in a few weeks; but others have taken a very long time to heal or a permanent sinus has been left, and in one case* malignant disease developed around the orifice of the sinus.

A characteristic feature of these tumours is the liability to hæmorrhage into them. Before I saw the case just related the patient had been taking much exercise on horseback, and the character of the fluid in the cysts showed clearly that hæmorrhage had taken place into some of the loculi. There can hardly be a doubt that the rapid increase in the size of the tumour was due to repeated hæmorrhages, and that the extreme tenseness of the cyst at my first examination, which made me think it was a solid growth, was caused by a recent escape of blood. Pancreatic cysts have very frequently been associated with injuries, and it has been supposed that they are retention cysts caused by

* 'The Lancet,' August 8th, 1891, p. 291.

obstruction of a duct from inflammatory contraction of its walls. But Senn showed that very little dilatation followed experimental obliteration of the duct, and that a part of the gland physiologically separated from the main duct underwent simple atrophy. He and Cathcart have suggested that these cysts are due to rupture of the tissue of the gland, the formation of an adventitious membrane, and the continued escape of blood and pancreatic secretions into the cyst thus formed. It is difficult to imagine how such a tumour as that which I removed could have formed in either of these ways. The existence of many loculi in the growth, and the fact that some of the smaller loculi grew from the inside of the wall of larger ones, are, I think, inconsistent with either of these modes of development. It seems to me that the tumour which I show, and which I have presented to the Museum of the Royal College of Surgeons of England, is a true neoplasm.

Another question is suggested by the consideration of these cases. If pancreatic cysts are caused by an accidental laceration of pancreatic tissue followed by the effusion of blood and pancreatic secretions into an adventitious sac, there must be some risk that a surgical wound of the organ may also give rise to a cystic development. It seems to me, therefore, that a patient should be cautioned particularly to avoid exertion and excitement for a prolonged period after the pancreas has been wounded during an operation. A recognition of the possibility of such a development might lead to a favourable prognosis if there should appear to be a recurrence of a pancreatic cystic growth which had been removed. Simple drainage would be the obvious treatment, and it is a question whether it would not be wise in all cases to drain the wound after such an operation as I have described.

This case is the only one of pancreatic cyst that I have seen, with the exception of that related by Mr. Doran. His report, and the reports of similar cases, indicate that in many instances the complete removal of such cysts is quite impossible. Moreover, single cysts have frequently been cured by drainage. Obviously it would not be right under these circumstances to attempt to enucleate every pancreatic cyst, and it seems to me that those which are directly due to injuries must be specially unsuitable for complete removal. When the tumour is multilocular, however, and when it is connected with the pancreas by a comparatively small surface, it

would appear to be proper treatment to effect a complete excision. In each case the decision as to which course to adopt should be reserved until the abdomen is opened. There can be little doubt that as my patient has recovered from the operation, complete removal of the tumour in her case was more satisfactory than a partial excision with drainage would have been. In a debilitated patient, on the other hand, an operation of this kind would be a very dangerous and probably an unjustifiable one.

These cysts are very rare. Dr. Hale White has recorded* that in the years 1883 to 1894, both inclusive, nearly 6,000 *post-mortem* examinations were made at Guy's Hospital and that pancreatic cysts were found in only four cases. One of these was a case of hydatids, so that there was only about one case of pancreatic cyst in every 2,000 necropsies. My colleague, Mr. Doran, has given us a most interesting *résumé* of the published records of cysts of the pancreas which have been treated by operation.† He tells me that he has found some 112 cases, and that the tumours were completely removed in about a dozen only of these, the others being drained. The exact number of complete excisions is uncertain because in one or two instances the report does not state definitely whether the removal was complete or partial. My case seems to be the second case reported of complete removal of one of these cysts in this country, Mr. Clutton's, in the 'St. Thomas's Hospital Reports,' 1893, being the first. Most of the recorded cases of complete removal have recovered, but the operation hardly seems so safe as might be inferred from this fact. Trouble in arresting hæmorrhage has been met with frequently, and my case is interesting as showing that although I had very serious cause for anxiety on this score, all hæmorrhage from the divided pancreatic tissue was completely arrested. The chief difficulty was to see and manipulate the parts—a difficulty which I have frequently encountered in dealing with hæmorrhage in the pelvis.

My friend Dr. Malcolm Mackintosh has made an interesting report‡ which indicates one termination of such a case as that I have related when the tumour is not treated surgically. The case was one of severe illness, commencing suddenly, almost immediately after the patient, an apparently healthy man, had

* 'The Lancet,' December 26th, 1896, p. 1805.

† *Loc. cit.*, ante, p. 92.

‡ 'The Lancet,' October 24th, 1896, p. 1149.

lifted a heavy sack. Symptoms began with "pain at the lower border of the ribs on the left side in the line of the nipple." This was followed by fever (102° F.), dyspnoea, dulness of the base of the left lung, distant respiratory murmur, diminished vocal fremitus and resonance, with slight cough and scanty expectoration. A coarse crepitus was heard over the whole of the dull area at the end of inspiration. After three weeks in bed the man got well and resumed work. During the illness there was no condition pointing to the necessity for examining the urine for the presence of sugar, and this was not done. Five months later the patient was seized with headache, backache, and pain in the left loin, with a temperature of 102° F. and a feeble pulse beating 120 to the minute. Four days later the whole of the base of the left lung, both in front and behind, was dull on percussion, and the apex beat was displaced to the right of the sternum. The presence of fluid in the pleura was diagnosed. Next day sugar was found in the urine, and for four days from 140 to 200 ounces of urine loaded with sugar were passed in the 24 hours. The upper part of the abdomen could not be satisfactorily palpated owing to distension of the hollow viscera. On the twelfth day of the illness 15 ounces of odourless, reddish-brown fluid were removed from the left pleural cavity, but without relief, and the patient died two days later. The *post-mortem* examination showed recent pleuritic adhesions over the base of the left lung. The whole of the organs occupying the left half of the abdomen were matted together by old strong adhesions. Below and behind the spleen a large fluctuating mass was discovered "containing about 2 pints of thin, sticky, slimy-looking fluid, none of which, unfortunately, was preserved for examination. The cyst was multilocular. . . . The pancreas was almost entirely destroyed, the only trace of it that could be found being a small piece of pancreatic tissue in the upper and posterior part of the wall of the cyst." The other organs appeared healthy. Dr. Mackintosh inclined to the belief that "a previously existing pancreatic cyst had taken on inflammatory action which spread to the tissues in the vicinity."

The fluid in some of these cysts is very irritating. Dr. Churton recorded* that although "the finest needle of a small exploring syringe" was used in aspirating a pancreatic cyst "a circumscribed

* 'Transactions of the Clinical Society of London,' vol. xxvii, p. 246.

peritonitis appeared to result" from the puncture. Mr. Cathcart* used a hypodermic syringe to explore one of these cysts, and almost immediately the contents of the tumour flooded the peritoneal sac, giving rise to intense pain. In my case the cyst walls were very thin, and a blow might easily have caused a rupture and effusion of the contents into the connective tissue around, followed by inflammatory symptoms, possibly of an obscure or misleading character, like those in the case I have just quoted. Under such conditions a correct diagnosis could be made only by an exploration of the abdominal cavity, and this was certainly not justified under the circumstances described by Dr. Mackintosh.

The possibility that a tumour may be a pancreatic cyst would, therefore, appear to be a special reason for carefully considering whether it is practicable to cure it by surgical means, and for making an exploratory incision at an early stage of the disease in cases of doubt.

[N.B.—In August, 1898, the patient was strong and well.]

The PRESIDENT, speaking as a physician, said it was remarkable that a tumour of the pancreas should be mistaken for a hydronephrosis, but it was another example of the difficulties of diagnosing this abnormality. He felt grateful, in view of these difficulties, for the further aids indicated by the papers just read. Under any circumstances, however, the diagnosis must often be a matter of doubt, and for this reason it seemed to him that exploration must be preferable to aspiration. He had always had the idea that these tumours were usually produced by traumatism, but that view seemed to be shattered by what they had had brought before them that evening. The diagnosis, he imagined, must rest on the existence of a recognisable swelling situated more or less in the left hypochondrium though it might apparently encroach to the right, and there might be pressure enough to determine jaundice. Pain was not mentioned as a trustworthy symptom, though it was usually described among the symptoms to which pancreatic cysts give rise. Anæmia was another important symptom; other symptoms were emaciation and vomiting. The latter, he supposed, were tolerably constant symptoms. Emaciation was very rapidly recovered from after operation, so that there was probably something in the nature of cause and effect. Examination of the aspirated fluid soon after the performance of an operation must be inconclusive for diagnosis, but later on the presence of a fluid with high amylolytic properties was a sign of great diagnostic value. It was strange that the fluid did not possess more fibrin-dissolving properties, but probably there was so much effused fibrin and blood clot that the peptonising power had already been exhausted. The conclusion of the whole matter seemed to be that in a case of abdominal tumour of some doubt or obscurity, the proper course was to advise abdominal section leaving the subsequent treatment

* 'Edinburgh Medical Journal,' 1890, p. 17.

in the hands of the surgeon. Enucleation was apparently uncommon, but although the mortality was high it seemed to him to be the proper procedure when applicable.

Mr. G. R. TURNER said he had had two cases—he said two, although the case mentioned that evening was described as a peripancreatic cyst yet the anatomy differed little, if at all, from one which he had had of undoubtedly pancreatic origin. In both, the cyst wall was thin, in fact hardly distinguishable from peritoneum, and he doubted if enucleation was possible. If possible, moreover, it would certainly have been dangerous, and was probably contra-indicated. He agreed as to the impropriety of attempting to enucleate, preferring incision and drainage. Mr. Malcolm's case, however, being situated more laterally at some distance from the stomach, and the great plexuses and vessels simulating a hydronephrosis, was possibly a case for enucleation, though personally he thought he would have preferred incision and drainage. In his own case he was able to drain very efficiently through the front incision, and to make an opening in the loin. To drain from the back could not but add to the risk run by the patient. In his first case at the bottom of the cyst there was some hard material about the head of the pancreas, as to the nature whereof he was unable to pronounce an opinion. It was suggested at the time that it might be malignant, but the subsequent progress of the case showed that this was not so, for although the operation was done in 1894 the patient was, when last heard of, alive and well. He did not think it would be wise to show oneself too inquisitive as to what was at the bottom of a deep recess so near to many important structures. He had been looking at the diagrams, and he thought both of his cases were similar to No. 2, except that the transverse colon was not displaced downwards and separated from the stomach by such a wide interval. In the first case the interval was probably not more than an inch and a-half through which he had tapped. In the second case there was, on opening the abdomen, a definite cyst to be seen, and the separation was a little greater but not more than 3 inches. In his first case the parts appeared so natural that it was not until he had made out fluctuation behind the stomach that he was satisfied that there really was a cyst.

Dr. C. W. CHAPMAN mentioned that the late Mr. Leopold Hudson had operated on a relative of his own for this very thing. The child was at present quite well. He did not remember that there was any history of traumatism in this case.

Dr. DE HAVILLAND HALL referred to a case in which jaundice first attracted attention. The patient was a woman, aged 35, there was an absence of physical signs, and he diagnosed simple catarrhal jaundice. It did not, however, clear up, and some weeks later he heard that Mr. Pearce Gould had been called in and had cut down upon a tumour in the epigastrium which proved to be a cyst of the pancreas. He commented on the occurrence of an urticarial rash after the operation. This, he suggested, was like the urticaria which often followed tapping an hydatid cyst.

Mr. BATTLE asked what information there was in respect of recurrence. It had been asserted that after a time the cysts recurred, necessitating further measures. All the cases brought forward that evening had been operated upon within the preceding twelve months, so that it was too early for them to be able to draw any deduction. Another point was the advantage of a posterior incision. In some cases a posterior as well as an anterior incision had been made, in others posterior incision alone.

He asked for information as to the relative value of the two incisions. He himself was very much against the aspiration of tumours in this situation, for experience had shown the risk of wounding great vessels, the stomach, &c. He had been consulted last year by Dr. Hector Mackenzie with regard to an interesting case. The patient had jaundice with some enlargement of the liver. He had had syphilis, and it was thought that there was a gummatous growth in the liver. The treatment adopted on that hypothesis seemed to have the anticipated effect, for he improved greatly, but while he was taking iodide of potassium a swelling appeared in the region of the pancreas which grew rapidly. He was then consulted and did abdominal section and examined the growth. This appeared to be malignant, and growing from the middle of the pancreas, so he did not venture to attempt removal, but it gradually disappeared afterwards and the patient completely recovered. The exact nature of the swelling must remain a mystery, but it was remarkable that iodide of potassium, which did not do any good before the operation, appeared to bring about marked improvement afterwards.

Mr. ALBAN DORAN agreed with Mr. Turner in respect of enucleation. He himself had at once seen that any attempt to enucleate would entail great difficulty, indeed the patient might have died on the table. The hard material in the head of the pancreas was an important pathological problem. He suspected that pancreatitis had a good deal to do with these formations, and traumatism might cause pancreatitis. He was interested to hear that a similar urticarial rash followed tapping of hydatid cysts, a fact of which he was previously unaware. It was noteworthy, however, that the rash did not appear on the skin where it was bathed by the juice. It was very hot at the time and the patient perspired a good deal. Mr. Gould was, he thought, the first in this country to operate on a pancreatic cyst. He pushed it against the loin and made an incision into it, and it seemed to have answered very well. It was much the best to tap from the loin if possible; in Mr. Doran's case it was impossible. He referred to the enucleation of a lymphosarcoma which was shelled out of the pancreas. Mr. Malcolm's multilocular cyst was very different to the one he himself had operated upon, and it belonged to quite another category. He thought that though adherent to the tail of the pancreas it was a retro-peritoneal cyst, such as are met with in front of the kidney. He mentioned the case of a young lady with an enormous abdominal tumour which resembled a sarcoma of the kidney. It was situated behind all the viscera, and in the course of the search something all at once appeared like a mass of soap bubbles. It was pulled away, and at last a perfectly healthy kidney was found behind. These were the retro-peritoneal cysts, probably of congenital origin. He insisted on the importance of making out clearly whether the cyst was in the lesser cavity of the peritoneum, between the layers of the mesocolon or in the general peritoneal cavity.

Dr. ROLLESTON said that with regard to the production of pancreatic cysts by pancreatitis, there were two methods of formation:—(1) As a result of acute pancreatitis the peritoneum lining the lesser sac being affected by a direct extension of the inflammation, a localised peritonitis with effusion resulted; if the foramen of Winslow became closed and the patient survived, a peripancreatic cyst might thus result. In three cases of fatal acute pancreatitis that he had examined the inflammation had spread apparently by direct continuity, and not by the swollen lobules of the inflamed pancreas bursting through the peritoneum covering them

into the lesser sac of the peritoneum. (2) As a result of more chronic pancreatitis, which compressed the ducts and gave rise to cystic dilatation. This process probably accounted for the congenital cystic disease of the pancreas which had been found in association with a similar condition of the liver and kidneys. The fact had been mentioned in the discussion that during operation on pancreatic cysts the head of the pancreas had been felt to be hard and enlarged, and naturally suggested new growth. It was worth while mentioning in this connection that the head of the pancreas might be enlarged and hard without there being any new growth. In *post mortems* this was sometimes well marked without there being any satisfactory explanation forthcoming. The enlargement might be due to the process of chronic inflammation spreading from an adjacent calculous cholangitis or from a duodenal or gastric ulcer. He had recorded* a case in which the latter sequence of events was so marked that during life it was regarded as one of malignant disease.

Dr. HALE WHITE had drawn attention to fibrosis and enlargement of the head of the pancreas as a result of backward pressure in mitral disease.† These facts were important, since an operation might be abandoned under the impression that a fibrosed or enlarged pancreas was infiltrated with malignant growth.

Mr. MALCOLM, in reply, said he had only seen one other case of pancreatic cyst, and he had suggested a hydronephrosis, then an intra-peritoneal cyst, and, lastly, an ovarian tumour with a long pedicle. There were two kinds of cysts: one due to traumatism, which probably it would be impossible to excise at all. When he first saw his case he thought it was a congenital cyst of the kidney, which was the only thing he could think of in that situation. The chief attachment of the tumour was to the pancreas, and its chief blood supply was undoubtedly from the pancreas, so that he was still inclined to regard it as a true cyst of the pancreas.

January 10th, 1898.

ADHERENT PERICARDIUM.

By Sir WILLIAM BROADBENT, Bart., M.D., F.R.S.

MR. PRESIDENT,—I am greatly honoured by your invitation to open a discussion before the Medical Society on “Adherent Pericardium.” I take it that what is expected of me is not a full and complete consideration of adhesion of the two layers of the pericardium, but a brief account of my observations and reflections which may invite comment and criticism and contributions from the experience of other physicians.

* ‘Practitioner,’ November, 1897, p. 465.

† ‘International Clinics,’ 1896–97 Series, vol. iv, p. 90.

I think I am right in believing that adherent pericardium often escapes recognition, and that a definite diagnosis of this affection is not often made, or perhaps attempted; and I am sure I am right in saying that the diagnosis is often extremely difficult, and sometimes that it is practically impossible to arrive at anything more than a conjecture of its existence. Partial adhesions may give rise to neither symptoms nor physical signs, and even adhesions involving the entire surface of the heart may be attended with little or no interference with its functional efficiency, and therefore with no appreciable hypertrophy, or dilatation, or disturbance of the circulation calling attention to the heart, provided there is no outside adherence of the pericardium to the chest-wall. It might, perhaps, be going too far to say that when adherent pericardium has given rise to neither symptoms nor recognisable change in the dimensions or form of the heart it can have no importance whatever, for while it may not sensibly impede the action of the heart during ordinary exercise, or even occasion unusual shortness of breath on exertion, it might hamper the right auricle and ventricle in case of bronchitis, or interfere with the compensatory hypertrophy of the left ventricle in case of renal disease or other condition attended with high arterial tension. Still more might it aggravate the effects of valvular disease; or the degenerative changes of old age in the muscular walls of the heart may be antedated, or fibroid infiltration may invade their substance from the fibrous tissue which binds the two pericardial surfaces together.

The symptoms to which adhesion of the pericardium gives rise have nothing characteristic about them. Breathlessness and a sense of oppression in the chest, palpitation, frequency or infrequency, intermittence or irregularity of the pulse, præcordial pain, sometimes severe enough to be worthy of the name "anginoid," have all been justly attributed to adherent pericardium, but each may have various other causes. It is only when other causes have been excluded that we can with confidence look upon such symptoms as due to pericardial adhesion. Very much the same may be said with regard to dropsy and sudden death; adherent pericardium may occasionally be responsible for either of these consequences of heart disease, but this is exceedingly rare in comparison with valvular and structural affections. Sometimes, however, the absence of stasis in the pulmonary circulation when

general dropsy is present from systemic venous obstruction, may show that the venous obstruction has its origin in the right side of the heart, which may be hampered by pericardial adhesions, and not in the left ventricle or lungs.

I am tempted to mention one case in which such symptoms were of themselves almost sufficient to establish a diagnosis of adherent pericardium. In a young man, otherwise strong and healthy, and with no renal or valvular disease, œdema of the lower extremities came on rather rapidly, and two or three times subsided as rapidly when he lay up for a few days. It then became persistent in spite of rest, and very soon enormous. There was never at any time evidence of back pressure through the lungs, or of obstruction in the veins of the neck, and it was remarkable how little the patient suffered. The œdema was relieved time after time by Southey's tube, but at length death supervened from cellulitis, when it was found that the pericardium was universally adherent, but also that the right auricle was practically obliterated by the adhesions surrounding it, so that the superior vena cava was directly over the inferior. Having the advantage of gravity, its stream had dammed back the ascending current in the inferior cava, and this vein was enormously dilated. An explanation was thus afforded of the absence of stasis in the lungs, and of enlargement of the jugulars.

A very common problem presented for solution is whether in a given case of valvular disease there is not also adherent pericardium. The different forms of disease of the valves are attended each with its own characteristic effect on the cavities and walls of the heart, by means of which compensation is more or less perfectly attained, and the degree and kind of dilatation or hypertrophy become a criterion by means of which we estimate the amount of obstruction or regurgitation. But this criterion sometimes fails us. For example, a well-marked collapsing pulse, carotid throb, capillary pulsation, and absence of the aortic second sound indicate very considerable insufficiency of the aortic valves. The patient is of an age when compensation ought to be promptly established, and we expect to find a powerful diffuse apex thrust in the sixth space or lower, extending probably outside the vertical nipple line. But we are disappointed; the dilatation is comparatively slight, the hypertrophy poorly developed, and the patient suffers from inordinate shortness of breath. A presumption arises,

to be verified or not by careful investigation, that the development of compensatory changes has been prevented by adherent pericardium. Or the very contrary may be present: very little regurgitation may be indicated. Although there is a double murmur, the collapse of the radial artery and the carotid throb are little marked, and the aortic second sound is distinctly heard in the neck, and yet the heart is obviously enlarged and labouring. It has something to contend with besides the regurgitation—possibly adherent pericardium.

Similar illustrations are furnished even more frequently by mitral disease, and the effects of adhesion of the pericardium are more serious in mitral disease, since the work of compensation falls upon the right ventricle and this ventricle is more hampered by adhesions than the left, both because it is thin-walled and not competent to contend with the obstacle to its complete contraction and because, forming as it does the greater part of the surface of the heart, it presents a larger area for adhesion. Being thin-walled, again, a larger proportion of its thickness is implicated and damaged by any myocarditis which may have accompanied the pericarditis or by fibroid penetration from the surface.

Diagnosis.—The diagnosis is arrived at by means of physical signs, and there is no better field for minute observation and careful discrimination. We shall better know what to look for and what value to attach to any deviations from the normal which we may discover if we consider the conditions present.

In the normal state the heart glides over the central tendon of the diaphragm upon which it rests, both with its own systole and diastole and with the respiratory ascent and descent of the diaphragm. When adhesion takes place all shifting and gliding must cease; a given area of the surface of the heart (which will correspond very nearly on the posterior inferior aspect with Sibson's fixed point in the interventricular septum in front) is bound to a definite part of the tendinous expansion. While the heart is thus fixed the respiratory excursion of the central tendon must also be restricted, since the heart is adherent to the pericardium as well as to the diaphragm and the fibrous connections of the former do not allow of its free movement downwards. Now, the triangular space between the diverging costal cartilages is closely associated with the central tendon of the diaphragm, and it is here that we look for evidences of the adherence of the heart thereto. Visible

or palpable pulsation does not help us, for we may have either epigastric protrusion or tug in normal conditions. Much more significant is the complete arrest of the slight respiratory movements of this part of the abdominal wall. It has been my practice for more than 20 years to note carefully the indications of adhesion left by general pericarditis in every case which has come under my observation, and this arrest has never been wanting. It cannot be said, however, that immobility of the epigastric triangle necessarily implies adherent pericardium.

Other evidences of fixation of the heart are imperfect descent of the apex-beat during inspiration and inadequate shifting of the cardiac impulse when the patient lies first on one side and then on the other, more particularly when he turns upon his right side. As a rule, in normal conditions the apex, when its beat is recognisable, disappears from the fifth space and is felt in the sixth on a deep breath being taken and held, and moves for an inch or so towards the middle line, descending also somewhat when the patient lies over on the right side. Similar shifting of the apex-beat and of its maximum impulse may be observed even when the heart is dilated and hypertrophied in consequence of valvular disease. Distinct evidence of free mobility obtained in this way would exclude pericardial adhesion, and a marked failure to respond to the test would raise a strong presumption of its existence. But nothing must be accepted as absolute in clinical investigation, and the exercise of judgment will be called for in estimating the significance and value of the results obtained. For example, whether the pericardium is adherent or not a deep inspiration may bring the lung over the heart and the apex-beat may be altogether obliterated; its disappearance from the fifth or other space, therefore, is not conclusive of mobility. Again, when the patient is turned over on his right side a transference of the seat of maximum impulse may simply mean that another part of the heart has been brought in contact with the chest wall and not that the apex has shifted. Not unfrequently, however, from one cause or another, no apex-beat or impulse of any kind can be felt, so that palpation affords no assistance whatever and percussion cannot be relied upon to furnish the kind of evidence required to distinguish between fixation and mobility of the heart.

Indications may be furnished by dilatation and hypertrophy, which may sometimes be quite conclusive when there is no valvular

disease. The dulness in a characteristic case usually begins in the third space, and the apex-beat will be at the nipple level or even higher and outside the mamma. It will probably not shift with a deep breath, but it may be obscured. The transverse position of the heart and the fixation of the apex above its normal point of contact with the chest wall I formerly looked upon as a consequence of effusion which had carried the apex upwards and left it adherent there. I am now convinced that the cause is not effusion but dilatation. There may be conspicuous systolic falling in of the fourth and fifth spaces, and although this may be due to atmospheric pressure when the heart is very greatly enlarged from any cause it may be a true retraction or tugging. Diastolic tugging may sometimes be felt when the hand is applied over the region of the apex; there is not merely a subsidence of the push but a sharp shock as if the chest wall were dragged upon from within, which is quite different from what is felt even after the more powerful thrust which is given by the dilated and hypertrophied heart of aortic regurgitation.

A systolic tug of the left false ribs posteriorly communicated by the diaphragm may be conspicuous. The recoil from the drag may be so distinct as to look and feel to the hand like pulsation, and in the first case in which I observed it, now more than 20 years since—a case of left empyema—it was taken for pulsation, and it was supposed that a pulsating tumour of some kind underlay the empyema. A *post-mortem* examination showed that the cause was adherent pericardium. I have often seen this tugging since, and in some cases it can be made to affect the right false ribs by causing the patient in the sitting position to lean over to the left so as to throw the drag of the heart upon the right half of the diaphragm. It must be added that this indication is not infallible, as the tugging has been observed when the heart was hypertrophied without adhesions.

The pulsus paradoxus has been observed in adherent pericardium and an effect on the veins in the neck has been described, but I have not found either of these indications helpful. In several cases I have seen a very pretty confirmation of the diagnosis in an apparent pulsation of a small tortuous vein on the front of the chest penetrating the third space near the sternum. On careful examination the vein was seen not to fill by reflux during systole but to be emptied by a sharp suction action.

It was inferred and verified *post mortem* that the internal mammary vein into which the surface vein opens was compressed during diastole and that its walls were dragged apart by the systole.

Auscultation does not afford much assistance in the diagnosis of adherent pericardium. Reduplication of the second sound is very common when no other indication, except perhaps immobility of the epigastrium, is present, but it is so easily induced that no definite conclusion can be based upon it, unless, perhaps, when it is constant in all positions of the body and under varying conditions of the circulation.

Sir R. DOUGLAS POWELL agreed in the importance of dividing cases of adherent pericardium into those cases in which the adhesion was simple, *i.e.*, between the two pericardial surfaces alone, and those in which the external surface of the pericardium was also adherent to the mediastinal surfaces. With regard to the clinical diagnosis of adherent pericardium in its simple form, they must further separate the cases in which the adhesions were associated with much thickening or calcareous deposit, &c. In these cases there were the physical signs not necessarily of adherent pericardium so much as of enlarged surface of the heart, such as would be caused by an effusion into the pericardium. If they set aside the cases in which there was thickening as well as adhesion of the pericardium, he thought it might be safely affirmed that there was no one sign or group of signs which would enable them to say with any degree of confidence that adherent pericardium existed. On looking through the literature of the subject there were found many competent and able observers who insisted on this or that sign as characteristic of adherent pericardium, but an equal number of equally competent observers had strenuously opposed their significance. A careful consideration of the history and signs present in certain cases might justify the conjecture that the pericardium was adherent, but if they had the opportunity of following the cases into the *post-mortem* room they would find in a considerable proportion that no such adhesion existed, while, on the other hand, adherent pericardium was met with in other cases where nothing during life had suggested its existence. Although often not recognisable by physical signs, it was nevertheless a factor of some importance in the symptomatology and prognosis of cases of heart disease. The mechanism of the heart's action could not but suffer by such an alteration of the conditions under which it acted. He believed, too, that within physiological limits the pericardium safeguarded the heart against sudden congestion under conditions of strain by its readiness to admit of such slight effusions as might give temporary relief. They might find in the healthy pericardium a variable amount of fluid from just enough to lubricate to several teaspoonfuls. It was common to find *post mortem* a certain amount of effusion in the pericardium in cases in which death had been attended with considerable cardiac difficulty, and without there being any pericardial lesion. That regulating function must cease with an adherent pericardium. Then, again, the current of lymph through the pericardium must aid the circulation in the sub-pericardial lymphatics, and this aid to the more ready removal of waste products must be abolished in cases of adherent pericardium. There was no doubt a

certain compensation in adherent pericardium, because certain anastomotic loops were established between the vessels of the heart proper and branches of the internal mammary artery; nevertheless the existence of adherent pericardium must thus mechanically and physiologically hamper cardiac function and favour the occurrence of degenerations. He suggested that perhaps too much attention was directed to pericardial adhesions in pathology. Only a certain proportion of cases of adherent pericardium were caused by pericarditis. In many, perhaps one-third, it was the result of chronic disease of the heart; in other words, it was due to parenchymatous, and not to inter-serous, inflammation, and comparable to adherent pleura, adherent capsule of kidney, and perihepatic and peritoneal adhesions. He related a case of aortic regurgitation in a sailor, in which the history of illness commenced after a bout of extra hard work. He suddenly fell ill with severe cardiac embarrassment and hæmoptysis. The case had puzzled him, but at the autopsy, in addition to the aortic valves being considerably torn down, they found almost universal pericardial adhesion, and it was probable the adherent pericardium, in the manner suggested by Sir W. Broadbent, had prevented the heart accommodating itself to the strain suddenly placed upon it. He thought that the physical signs related as significant of adherent pericardium were mostly based upon cases of mediastinal adhesions in addition to simple pericardial adhesions. Of this variety there were, apart from cases of growth, aneurysm, &c., two principal causes. There might be extension of a very severe pericarditis through the outer surface of the pericardium to produce a mediastinitis, or there ought to be an extension of an inflammatory process from the pleura to the pericardium, and possibly through the pericardium to the cardiac surface. In the latter connection, there were a certain number of cases which did not properly fall within the scope of the discussion, viz., cases of chronic left-sided lung disease, in which adhesions formed between the pericardium and the lung. In such cases there was great uncovering of pericardial surface, and they were attended with much functional irritability of the heart. Such cases were very common. In these cases, however, there was often no adhesion between the heart surface and the pericardium; in fact, the adhesions were outside the pericardium. The signs of adherent pericardium with mediastinal attachments that had struck him most were well illustrated by the case of a girl, aged 10, who, after a four months' illness with severe endo- and peri-carditis, was left with a double mitral murmur and great hypertrophy of both sides of the heart. More immediately concerning the pericardium, there was a systolic depression of the first, second, and third intercostal spaces to the left of the sternum, and of the first and second on the right side; also a systolic depression of the fifth, sixth, and seventh spaces on the outside of the left nipple line beyond the apex-beat. The apex-beat itself was strong and thrusting over a limited area outside the nipple line; it did not shift with respiratory movement or with the position of the patient. The diastolic shock was perceptible on placing the hand over the precordial region. The upper border of cardiac dulness was very high, reaching the second rib; it extended also two fingers' breadth to the right of the sternum. This extended area of cardiac dulness was unaffected by respiration. There was no respiratory change in the pulse, no collapse of external jugular veins in the neck, but there was some diastolic recession of the lower end of the neck on both sides. The only signs in this case wholly attributable to adherent pericardium, as in

most cases of the kind, were the unchanged area of cardiac dulness to percussion, and the traction on the spaces *outside* the position of the apex-beat. He himself had never observed that tugging in places of the apex-beat which had been noticed by certain authors. The paradox pulse was not present, and this sign was to be observed in so many other conditions that he did not think it of any diagnostic importance. The clinical importance of double cardiac and mediastinal adhesions of the pericardium must be very great. In the first place there was the simple pericardial adhesion which enclosed the heart in a more or less unyielding membrane, and had the physiological disadvantages of closure of the sac already detailed; this adherent membrane was further attached to the surrounding and more or less rigid parietes, thus greatly crippling cardiac contractions and interfering with the normal aspiration of blood to the heart cavities. He agreed that the stress of these conditions fell principally upon the right heart, because of its forming a relatively large proportion of the heart's surface, because of the right heart cavities being relatively thin walled and from their front position becoming attached to more rigid parts of the mediastinal surface.

Dr. JOHN BROADBENT said he had taken great interest in this subject, his attention having been attracted thereto by the frequency with which adherent pericardium was met with in the *post-mortem* room which had not been diagnosed during life. The *post-mortem* records of St. Mary's Hospital for 1890 to 1893 conclusively showed that in 87 cases of heart disease no less than 31 showed evidences of pericardial adhesion. He recalled that Sturges, in his Lumleian lectures, quoted from the Great Ormond Street Records that of 100 cases of heart disease only six failed to afford evidence of pericarditis. The great number of cases of pericarditis in these statistics would be accounted for by the fact that a large number of these subjects were children on whom rheumatism had set its stamp in the form of nodules, and rendered them liable to recurrent attacks of pericardial inflammation. His attention had been attracted to the variable size of the heart in these cases. Sometimes it was normal, or less than normal, but in the majority it was enlarged, being hypertrophied and dilated. The key to the solution of this problem seemed to lie in the investigation of cases of pericarditis which could be kept under observation while going on to the formation of pericardial adhesions. In six cases which he had collected the diagnosis made during life was confirmed *post mortem*. In most of the cases which proved rapidly fatal, the heart was considerably dilated and the pericardium adherent. The myocardium was also frequently affected. In attempting to explain the varying size of the heart in association with adherent pericardium he must refer to certain clinical points in pericarditis. One of the most interesting clinical features was the rapid early increase in the cardiac dulness, due not to effusion but to cardiac dilatation. In favourable cases, as the patients became convalescent, this extra area of cardiac dulness rapidly decreased. In the chronic or subacute cases which went on to adherent pericardium, either the area of cardiac dulness remained permanently increased, or, as more usually happened, after a temporary improvement became worse, and remained permanently increased, indicating further dilatation of the heart. He thought the frequency of the large heart met with in association with adherent pericardium was due to the fact that the pericardium became adherent to the heart when it was in a condition of dilatation, and it was maintained in this condition by the adhesions. In cases where the heart was normal *post mortem* he

would infer that the heart had regained its normal size before the adhesion took place. The dilatation in the subacute cases of pericarditis was probably due to myocarditis. The rapid primary dilatation that occurs at the onset of acute pericarditis he thought was due to a kind of paresis of the cardiac muscle due to the influence of the inflammatory process analogous to what occurred to the intestines in peritonitis. That, however, was a mere suggestion. With regard to the physical signs and symptoms, he added that one might regard enlargement of the heart as a possible indication of adherent pericardium when there was no evidence of valvular or kidney or other disease to account for it. With regard to the diagnosis itself, he admitted that it was always difficult, and often impossible, to arrive at merely from a consideration of the physical signs and symptoms. Some useful information might often be gained by a comparison of the physical signs and symptoms, viz.: in a given case, having ascertained the physical signs and estimated the degree of the cardiac lesions, one would ask one's self whether the symptoms were in excess of the lesions. With regard to the diagnosis in cases of recent pericarditis the problem did not present so much difficulty. The indications which might lead one to suspect the occurrence of adherent pericardium would be the persistence of the pericardial rub for a considerable time, the persistence of the cardiac dilatation, a prolonged convalescence, during which the patient remained pale and thin and incapable of any exertion, especially when, after a temporary improvement with reduction of the early cardiac dulness, there was an unaccountable relapse. It was on the right ventricle that the strain mostly fell, especially when called upon to compensate for valvular disease of the left side of the heart, and it was the right ventricle that was most embarrassed and hampered by adhesions. He thought they must consequently attach some importance to symptoms of right ventricle failure, which came on unaccountably in cases where there was no evidence of any serious valvular disease or other obvious cause for their occurrence.

Dr. S. WEST agreed that adherent pericardium was more often missed than discovered, and that it was met with in a great many cases *post mortem* where it had not been suspected during life. Cases might be observed of pericarditis followed by recovery, and yet the attack had been of such severity that it was impossible to believe that the whole of the lesion had cleared up and disappeared. He asked what evidence there was that a severe attack of pericarditis was ever quite recovered from. Yet no symptoms might remain, though, if the patient died from some other disease, adherent pericardium might be found. The diagnosis would then be impossible, because there were no symptoms. He passed on to consider another class of cases in which a diagnosis was made somewhat in the following way. For instance, a patient who had had rheumatic fever presented the lesions of mitral disease, but there were certain points in the physical signs and general aspects of the case which mitral disease alone did not explain; that something often proved to be adherent pericardium. A sign once regarded as pathognomic—the recession of the apex-beat—was certainly rare, yet it was still mentioned as one of the most characteristic signs. It was clear that peculiar conditions were required in order to get it, but when present it might be regarded as pathognomic. The pericarditis must have led to adhesions at the base which prevented the heart springing back as it did in health on systole, and there must be adhesions not only between the two layers of the pericardium but between the heart and the chest walls at the

apex. Otherwise it could not be obtained. Obliteration of the serous sac was probably the least part of the disease. The fibrous tissue of the pericardium was directly continuous with the fibrous structures all round it in the mediastinum and in the heart itself. It was, therefore, impossible to have anything like severe pericarditis which did not involve more or less of these tissues. A great deal depended upon the extent to which these surrounding structures were involved. As long as the sac was merely obliterated, the movements of the heart were not much interfered with, for the attachments of the sac to the sternum were very loose, so that if the sac were merely obliterated, the heart still moved freely and was not really hampered. When there were adhesions or thickening in the mediastinal tissues, the movements of the heart were never much hampered. Where the tissues external to the pericardium were involved there were two groups of cases—one in which there was thickening or calcification, so that the heart was enclosed in a rigid sac, the other in which the heart was bound tightly to the sternum, the fibrous tissue being a half or even an inch in thickness. In both these cases it was obvious that the heart movements must be greatly interfered with. If the inflammation opened into the muscular substance of the heart itself there would be produced a condition of interstitial fibrosis similar to that found in the liver in cirrhosis, and with much the same results; the soft cells of the heart, like the soft cells of the liver, being pinched and ultimately undergoing degeneration and atrophy. He pointed out that dilatation rather than hypertrophy was often due merely to an increase in the fibrous tissue, and not to growth of muscle. A change of this kind of course would explain why the symptoms of cardiac failure appeared so rare. Extra pericardial adhesions at the base might produce very remarkable results, and he referred to a case which might be placed alongside of that mentioned by Sir William Broadbent in which the vena cava superior had been obstructed, and in which for a short distance it was completely obliterated. This produced very puzzling symptoms during life, and the nature of the case was, of course, not recognised. He asked how long the friction might last. He himself had witnessed it for weeks, or even some months, in cases in which all the symptoms had subsided except the friction. In respect of the cause of pericarditis there was a group of cases in which the pericarditis was latent, that is to say, the affection was discovered by the physical signs, though there were no symptoms to point to it. Latent pericarditis was not uncommon in the course of gout and granular kidney.

Dr. EWART regarded the simple bands of adhesion often limited to the apex of the heart as relatively unimportant, their length allowing considerable mobility. Universal adhesion of the pericardial membrane to the heart without thickening, a condition resulting from simple acute pericarditis, probably did not seriously hamper the cardiac movements. Even when this thin membrane was also adherent to its outer environment, the heart was probably able to accommodate itself to the circumstances owing to the elasticity of the pulmonary tissue surrounding it. Greater difficulty would arise when the membrane was thickened by neo-plastic deposits or by chronic mediastino-pericarditis, and this would be much aggravated by any induration of the surrounding organs, causing the heart to be bound down in a rigid bed. In connection with the collateral subject of pericardial effusion, Dr. Ewart had been glad to hear it stated by Sir William Broadbent that the old view "that the apex of the heart was raised by the effusion" had been given up. He

agreed with Sir Douglas Powell in thinking that the fluid contents of the pericardium might be subject to considerable physiological variations in quantity, and might act in a manner analogous to the fluid in the meninges in equalising pressures. This view received support from his own observations on the frequency of transient pericardial effusions, which were often overlooked, though readily to be detected by careful percussion. Reverting to the effect of pericardial adhesions upon the heart, he believed that stress was thrown chiefly upon the left heart. The right side of the heart was fixed by the superior and by the inferior vena cava, in addition to its basic attachment to the pulmonary artery; its anterior ventricular surface was in permanent contact with the rigid chest wall, and its inferior surface with the diaphragm; its auricular surface was in contact with the right lung, whilst posteriorly it faced the convexity of the vertebræ. On the contrary, the left side of the heart presented no attachment except at the base, and the greater part of the left ventricle was surrounded normally by yielding lung tissue which allowed it great freedom of movement. This would be much interfered with by the establishment of rigid adhesions, and those points on the ventricular surface would suffer most which normally possessed the greatest range of movement. The work of the left ventricle being normally greater, the superadded struggle against adhesions might readily overtax its strength. Dr. Ewart regretted that Sir William Broadbent had limited the scope of his important communication and had not given the Society his views on treatment.

Dr. LEES said it was clear from the remarks that had preceded that they were all fairly agreed that cases of adherent pericardium must be divided into two classes: (1) cases in which, in addition to adhesion of the two pericardial surfaces, the external surface had also contracted adhesions; and (2) those in which external adhesions were absent. The physical signs which had been so carefully enumerated by the author characterised the first class of cases. In them the signs were often very distinct, and the diagnosis could be made with tolerable certainty. No doubt in such cases adherent pericardium was a very considerable factor in damaging the action of the heart and in diminishing the duration of life. But the cases in which there were no external adhesions were extremely difficult to diagnose, and it was doubtful how far this condition interfered with the action of the heart. One met with many cases of death from some other disease, in which the pericardium was found universally adherent, without proof that the action of the heart had in any way been hampered. In other instances of adhesion of the pericardial surfaces there was distinct evidence of cardiac disease, and the question arose whether such cardiac disease was really the result of adherent pericardium or not. It was not safe to assume, because evidence of such disease was present, that the one was the result of the other. His own conclusion, derived from a study of the acute dilatation which takes place in pericarditis in children, was that the effect of adherent pericardium without external adhesions was indirect rather than direct, by which he meant that it tended to fix and render permanent a dilatation which was really a part of the original rheumatic attack. His attention had been drawn to this subject while studying the external application of ice as a means of treating pericarditis, which involved careful daily examination of the physical signs. He had been much struck by the evidence of acute dilatation of the heart accompanying rheumatic pericarditis. In a paper on the treatment of pericarditis, published in 'The Lancet' in 1893, he

had attributed this early dilatation to a weakening of the cardiac wall, a result of the implication of the muscular structure of the heart in the inflammation of the pericardium, for the visceral pericardium is part of the cardiac structure, so that visceral pericarditis is really a superficial carditis. This explanation, however, was not altogether adequate. In several cases of young adults suffering from their first attack of rheumatism, with no evidence of previous heart disease, and neither rub nor murmur at the time of the examination, he had found very marked dilatation of the heart. This was registered by tracings taken daily, without reference to the charts of preceding days, and a series showed that there was an acute dilatation of the heart, which could be watched diminishing as the patient improved under treatment. In one case of a patient with acute dilatation without rub or murmur the cardiac dulness returned to its normal dimensions; the patient afterwards came back to the hospital suffering from a second attack of rheumatism, and the same phenomena recurred. There must consequently be some other cause for the dilatation observed in pericarditis than the simple implication of the cardiac wall in the pericardial inflammation. It is clear that in cases of pericarditis the dilatation is a simultaneous result of the rheumatic process, whatever that may be. This dilatation may conceivably be fixed and rendered permanent by adhesions. In cases that recover from an attack of pericarditis careful observation will usually show that the heart is damaged. There remains too large an area of cardiac dulness, and the pulse rate is too rapid. He believed that the symptoms which have been attributed to adherent pericardium after rheumatic heart disease are mainly attributable to this dilatation. There is nothing distinctive about the symptoms ascribed to adherent pericardium without external adhesions; they simply point to cardiac failure or dilatation. It will probably turn out that this acute dilatation in rheumatism is really the result of a toxic process, and analogous to the dilatation of the heart of the frog by lactic acid, demonstrated by Gaskell many years ago. It seems probable that rheumatism is a microbic process, in which the resulting toxine acts upon the cardiac wall and produces dilatation. A similar rapid dilatation of the heart, giving rise to a marked increase of the cardiac dulness, occurs frequently in influenza, and may produce fatal syncope.

Sir W. BROADBENT, in reply, concurred in Dr. Lees's remarks bearing on acute dilatation in association with rheumatic fever and other diseases. He believed this condition to be much more frequent than was generally supposed. He also accepted his conclusion that a great deal of the mischief ascribed to adherent pericardium was due to fixation of a dilated heart. He did not think a very sharp line, such as had been proposed, could be drawn between cases of internal and of external adhesions. Every gradation between the two was to be met with. In a large number of these cases would be found instances of subacute processes, in which there was not merely fixation by ordinary adhesions, but by chronic processes quite as much of the pericardium proper as of the mediastinal structures. He had known a friction sound to persist for an unconscionable period without assignable reason. In these cases the process had not always been subacute, but it had been persistent in cases which had begun extremely acutely. He said he was unable to follow Dr. Ewart's reasoning on the question as to which ventricle bore the strain. All the symptoms of cardiac failure produced by adherent pericardium were right ventricle symptoms. He failed to see that the

contact of the right ventricle with the rigid sections, on which it normally glided quite easily, had any bearing whatever on the changes that took place. It was the hindrance to contraction and not the contact with outside rigidity that did the mischief, by preventing the heart contracting on itself. To speak of the right ventricle being fixed above by the pulmonary artery was to show that he had not carefully observed the sequence of events as seen on the naked beating heart. Nothing was clearer than the fact that the heart had no fulcrum in the vessels, because both the aorta and the pulmonary artery were dragged down very considerably. That simple fact invalidated a good deal of his reasoning.

January 24th, 1898.

SOME REMARKS ON RECTAL SURGERY.

By THOMAS BRYANT, M.CH. R.U.I., F.R.C.S. Eng. and Irel.

By the death of a valued surgical friend and enthusiastic artist, Mr. P. Y. Gowlland, who, after being a surgeon to the London Hospital, found his life's work in a speciality, I have become through his widow the distributor of a large number of drawings of anal and rectal diseases which are not only of great artistic and surgical value but at the same time of rarity, for the nature of the speciality does not readily lend itself to pictorial representation, and it was only by an enthusiastic surgeon with artistic tastes that such a subject could have been adequately illustrated. The best of the late Mr. Gowlland's drawings are now in the possession of the Royal College of Surgeons of England, where they will always be open to the inspection of the Members of the College; but many are still in my hands to be disposed of according to my discretion. The possession of these drawings has therefore induced me at the present time to write the following notes on anal and rectal diseases, and to anticipate the intention I had formed of adding, at some future date, a chapter upon these important affections to those I have already published under the heading of 'Gleanings from Surgical Practice,' for, with my late friend's drawings to illustrate the subject, my remarks may be made more useful.

And first of all it must be asserted, and most dogmatically so, that anal and rectal surgery is not as a rule well treated by the

bulk of the medical practitioners of this country, for by the public most anal troubles are diagnosed as "piles," and the practitioner, when consulted, is too apt to accept the diagnosis of his patient and to treat him or her without making any local examination by which alone a correct diagnosis of the case can be made, and a line of treatment laid down which may be expected to be successful. Under such circumstances cases are too often allowed to drift, and although trivial cases may get well by such a process some become serious and the bulk of them pass into a chronic condition, entailing much unnecessary suffering and often serious consequences. It need hardly be added that the practitioner, in so acting, is not doing his duty or his best for his patient. When, therefore, a patient experiences so much anal or rectal distress as to induce him or her to seek advice it should be the invariable rule of the practitioner consulted to make a local examination, and this should be of such a character as to afford sufficient information to allow of the adoption of a rational treatment from which benefit can be anticipated.

An examination need be neither a painful nor a humiliating proceeding; it may always be conducted decently and should be so conducted. The position I prefer to place a patient in is on a bed or couch on the left side with the thighs flexed. In this position, with the patient's buttocks well separated, a good view of the anus and its surroundings can be obtained, and much knowledge can be acquired by mere inspection. If the skin about the anus and anal fold is healthy pruritus as a local affection may be dismissed with other external local troubles; if the skin be inflamed or irritated local rectal trouble should be suspected. If the anus is patulous some prolapse of the rectum may be present, and it will be at once seen whether the prolapsed tissue is simply mucous membrane, hæmorrhoidal, or polypus structure. If there is redundant skin about the anus and it is loose the antecedent prolapse of some tissue is suggested, and if the redundant skin is œdematous or otherwise infiltrated the recent prolapse of hæmorrhoidal or other structure or some lower rectal disease is rendered probable. If fæces or discharge flow from the patient's anus the possibility of rectal stricture or rectal ulceration should be raised. If the anus be drawn tight and seems to be the apex of a cone the presence of an anal fissure or ulcer should be suspected, and if this condition is induced or increased on the surgeon attempting

to separate the parts, and if, moreover, at the dorsal or perineal end of the anus a skin papilla is present, the suspicion of fissure would be confirmed. If any appearances of local inflammation are present they would be seen, as would any true external pile. All these points would be made out by mere anal inspection and careful painless examination; to learn more the introduction of the finger or speculum into the rectum may be required, and this should be undertaken either at the examination, which has been described, or at a later period. As a rule the whole examination should be made at once, although its postponement should invariably be followed when an anal fissure or ulcer has been found, or is suspected to be present, since the introduction of a finger or of a speculum past the external sphincter muscle would, under these circumstances, excite intense pain, consequently all further examination should be undertaken with the patient anæsthetised.

PRURITUS ANI.

This affection should always be regarded as a symptom of some local rectal trouble, and not as a disease *per se*, although it is not possible in some few cases to find out readily its precise cause. It is well known to be present in cases of ascarides, and it may be in every variety of rectal trouble, including external and internal piles, polypi, ulceration of the anus or rectum of every kind, and anal abscesses. When none of these causes exist some irritating rectal secretion, with or without a congested pelvic condition, may be suspected, particularly in women with any uterine affection. Stimulating articles of diet and beer and spirits may also cause it, but what I now wish to impress upon the practitioner is that pruritus ani is commonly a symptom of rectal trouble and must be so dealt with. Recently I attended a woman who had suffered from anal pruritus for 15 years unattended by other symptoms. She had taken much advice but had never been examined. On a careful investigation I found a sessile polypus, the size of a haricot bean, situated just within, but not protruding beyond, the sphincter. This I removed with an early and complete cure of her trouble.

ANAL AND RECTAL ABSCESS.

What has struck me most in the treatment of these cases is the undeniable fact that the majority of such abscesses have been

allowed to take their natural course and have not been dealt with as abscesses in other parts would probably have been—that is, by an early incision. By the use of poultices, and the necessary delay occasioned by their employment, many cases, which would have been regarded as trifling, have drifted into a serious condition, and many a local abscess which, by a timely incision, might have been speedily cured has passed either into an extensive diffused abscess requiring many incisions, or has degenerated into a condition of fistula with multiple openings, for the cure of which multiple incisions have been demanded. For it should never be forgotten that abscesses which form in the loose connective tissue about the rectum and ischio-rectal fossa readily burrow in all directions. Under these circumstances it should be a rule of practice to open them as soon as possible, and this rule is as applicable to the small anal abscess, with the view of saving pain, as to the larger ischio-rectal abscess, to save burrowing. Any abscess in these regions, if opened early, may be expected to heal without becoming a fistula, whereas if allowed to drift it will not only with certainty become a fistula, but probably a complicated one with many sinuses. A superficial anal abscess may be opened as any other in a superficial position; a deep-seated ischio-rectal abscess wants some care. With the patient placed on his side at the edge of a bed and anæsthetised, the surgeon's finger, well and thickly lubricated with some lard ointment, should be introduced into his rectum and pressed sufficiently far into the bowel so as to reach above or behind the abscess cavity, the object of this movement being to enable the surgeon to press the abscess cavity well forwards towards the perineum, and with a straight bistoury to make a free incision into it (*vide* Fig. 1). The cavity should then be irrigated with iodine water or some other antiseptic lotion and a piece of iodoform gauze introduced between the edges of the external wound for drainage purposes. There is no necessity for any plugging of the abscess cavity, for the hope of the surgeon is that the walls of the cavity, when cleansed as they should have been, will fall together and unite as speedily as possible; any filling of the abscess cavity with dressing would be enough to prevent this desirable result taking place, and at the same time would help to bring about the formation of a fistula.

A small acute abscess near the anus will produce in some cases severe pain in the part and also in the groin with which it is

associated by lymphatics, and the nearer it is to the anal orifice the greater will be the pain. The sooner this abscess is therefore relieved by an incision the sooner will relief be given. In deep-seated abscesses the same practice is called for, and when burrowing has taken place the surgeon should follow up the track of burrowing with great care. Some of the worst examples of ischio-rectal abscesses are those due to ulceration of the rectum caused by the presence of a foreign body, such as the bone of a

FIG. 1.



Method of opening an ischio-rectal abscess.

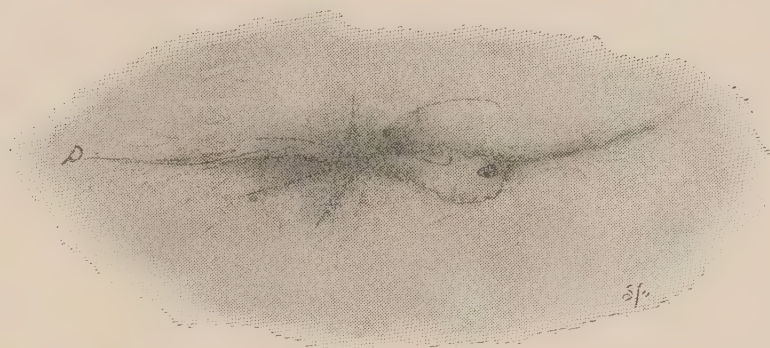
fish or otherwise, and most of such cases are really fæcal abscesses due to extravasation.

PERINEAL AND RECTAL FISTULA.

When an abscess has failed to heal and has passed into the condition of an anal or of what I prefer to designate a "rectal fistula," a careful local examination should be carried out, although not before a full history of the case has been obtained. The surgeon should, with the patient placed on either his right or left side—the side selected being the one upon which the external orifice of the fistula is placed—begin his examination by carefully feeling the external parts for hardness, and when such is found to exist its extent and direction should be noted, and particularly with reference to its relations with the external

opening or openings of the fistula, for where any hardness is present it is probable that there either is or has been some inflammatory action, and under these circumstances that there may be present some branch sinus, which, although not suggested by the external orifices of the fistula, has to be traced and laid open.

FIG. 2.



Sketch of a case of fistula in a man aged 43 years.

The question of the existence or position of the internal orifice of the fistula into the bowel has next to be considered, and in the cases in which the patient states he has satisfied himself that

FIG. 3.

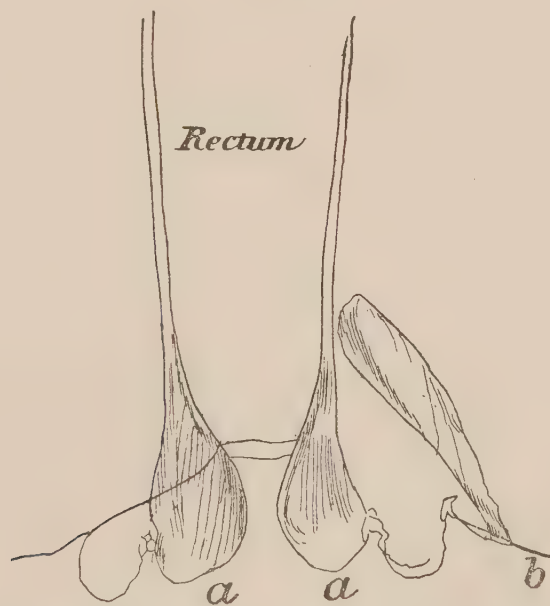


Diagram representing a case of prolapsed hæmorrhoids (a) (a) with blind external fistulà (b).

wind passes through the external opening of the fistula, the deduction is clear that an internal opening exists, although the precise seat of the orifice must still be obscure. To find the orifice

of communication a carefully conducted local examination is essential. As a rule of practice it is generally well for the surgeon to pass his probe-pointed director through the external fistulous opening before he passes his finger into the bowel, for in passing his finger, however gentle the surgeon may be, some spasm of the anal sphincter must occur, and in that way a difficulty is made to the passage of the instrument by the muscle throwing the sinus out of a right line. No force should be used in passing the probe, and should an obstruction be met with it would be well to remove the probe and give it a bend with the concavity upwards, the bend tilting the end of the probe upwards against the bowel.

FIG. 3A.



Diagram representing a case of blind internal fistula. (a) Seat of external abscess where opened.

When the probe has passed its supposed course the surgeon should then introduce his finger and thus determine the point he wished to elucidate. He has also, if there are many external sinuses, to make out whether each one has its own internal opening or whether there may be only one common opening, the more usual condition. He has likewise to satisfy himself that the sinus which communicates with the bowel ends at the internal opening or whether it passes up beyond, and, if so, how far. He should also so examine the soft parts around the external opening or openings as to be sure that they are not undermined or the seat of other lateral sinuses, for in the treatment of a fistula every

sinus should be found, and, as a rule, laid open, branching sinuses, or what have been described as **T** sinuses, always requiring this treatment.

The internal orifice of the fistula should always be made out, and with care it can generally be detected. It feels with the surgeon's finger in the rectum, when recent, like a depression in the walls of the bowel, and, when of long standing, more or less indurated. In exceptional cases the walls of the rectum may be extensively ulcerated, and under such circumstances the internal orifice of a rectal fistula will be difficult to recognise by the sense

FIG. 3B.



Diagram representing a case of fistula, with one external opening (*a*) and two internal openings.

of touch. At times the internal opening is so large as to admit the tip of the finger; under these conditions previous ulceration has doubtless been present, and has been the cause of the fistula or fistulæ, for where a large abscess has been the result of rectal ulceration, several external openings about the anus are usually present. Injecting the external fistula with milk or some coloured injection will often be a help in detecting the presence or position of an internal opening. The accompanying diagrams taken from Mr. Gowlland's drawings will illustrate most of these points and variations of fistulæ.

As a rule the division of a rectal fistula when well performed is a successful measure, and where failure follows it is as often due to the presence of constitutional causes as of local. The former

FIG. 3C.



Diagram representing a case of fistula, with one internal opening (*a*) and two external openings (*b*), (*b'*). The patient, a man, was 37 years of age.

may be difficult to overcome. The latter are mostly in the surgeon's power to control. Thus failure at times follows an operation when the surgeon has not found the internal aperture of the fistula, and has thus left a sinus extending above the internal

FIG. 3D.



Diagram representing a case of fistula, with internal opening (*a*) and external opening (*b*).

opening, which for a successful result should have been laid open. Failure likewise may follow any operative measure when any external sinus has been overlooked or not laid open, whether

branch sinus or otherwise. It should also be pointed out that failure at times follows operation when the surgeon has been satisfied by dividing the sphincter and laying open a single sinus but has omitted to cut away overlapping edges of skin or scraping away old sinus tissue, particularly in tuberculous subjects. Failure also is sure to follow where the fistula is the secondary effects of some rectal disease, such as extensive ulceration or any stricture of the bowel. In treating a blind internal fistula it is as a rule expedient to open first the abscess situated at the lower or perineal end of the sinus and subsequently to divide the external sphincter with the sinus channel.

FIG. 3E.



Diagram representing a case of fistula with three internal and external openings. The shaded area was the seat of ulceration. The patient, a boy, was 19 years of age.

In dressing a fistula after operation there is no need, after the first dressing, for any daily plugging of the wounds. Such wounds must, of course, be kept clean, but dressings are only needed to keep the edges of the skin wound from healing too rapidly before the deeper parts have filled up. The careful paring of the overlapping and undermined skin renders this old practice now unnecessary. The bowels should be kept open and the motion soft, not loose—for liquid stools are apt to excoriate, and always give more local pain to wounds about the anus than do the soft and pultaceous motions.

PERFORATING ULCERS OF THE RECTUM.

That a simple ulcer may start in the rectum and perforate its walls, and so give rise to a fæcal ischio-rectal abscess is a well-recognised fact, but I am not so sure that the profession, as a body, recognise the occurrence of a simple ulcer of the rectum perforating its walls at some higher or lower level, and giving rise to fæcal extravasation with, as a result, septic cellulitis of the perineum, abdominal parietes, gluteal region, and scrotum in the male and external genital organs of the female. I should like also to add to those possibilities a perforation of the bladder in the male and of the vagina in the female subject. I have seen and had under my care examples of all these conditions, and have a few rough notes of some of them, to which I wish to draw attention.

CASE 1.—The first case of the kind I saw was in 1858 when acting as surgical registrar to Guy's Hospital, and the patient was one under the care of the late Mr. Hilton. The man, aged 60 years, was admitted into the hospital in May, 1858, with œdema and inflammatory infiltration of the perineum, scrotum, and abdominal parietes as high as the thorax, and all these parts were emphysematous. This condition had commenced in the perineum and scrotum two days previously without any known cause. He had not had any difficulty in micturition, and his urine was clear and urethra healthy, nor so far as he knew was there any bowel trouble. Free incisions were made in every quarter that was involved, when fæcal air escaped and fæcal fluid was washed away. Rapid failure of power, however, set in, and the man died on the fifth day. A necropsy revealed that the urinary passages and organs were healthy and intact, but an ulcer was found in the anterior wall of the rectum, half an inch above the anus, which had perforated its walls and allowed the contents of the bowel to escape into the cellular tissue of the perineum and give rise to the condition described.

CASE 2.—In 1875 I was called to see a married woman, aged about 45 years, who when in apparent good health was suddenly seized with pain of a burning nature in her perineum which was rapidly followed by swelling of the external genital organs, and within 24 hours of the right gluteal region. I saw her on the second day and found all those parts swollen and emphysematous, and she was in a high state of fever. Free incisions into these swollen tissues gave vent to foetid fæcal air and dead tissue, and on making a rectal examination a large opening was found in the rectum on its right and anterior wall. By free irrigation of the tissues, the use of antiseptic lotions in the form of iodine water, and the removal of sloughs, a good recovery was brought about.

CASE 3.—In October, 1875, I was asked to see a married woman, aged 30 years, who was pregnant four months, for a sudden swelling of the

external genitals and vagina, of the right thigh and lower part of the abdomen as high as the umbilicus. It had existed about 24 hours, and had come on when she appeared to be in good health. I found all these parts inflamed and swollen and of a dusky hue, also crepitating to the touch, and the patient was very ill. By free incisions, however, into all these œdematous and emphysematous tissues, and the free use of iodine water by irrigation and constitutional treatment, a convalescence was brought about, and she subsequently gave birth to a healthy child. In her case I found high up in the rectum a perforating ulcer which had made its way into the sacral cavity, and hence the trouble.

CASE 4.—In 1874 a man, aged 53 years, was admitted into Guy's Hospital under my care who for three years had been passing flatus and, later, fæces with his urine, and for some months flatus and fæces without urine through his urethra. Some urine at the same time used to pass per anum. A rectal examination revealed an ulcer on its anterior wall at the base of the prostate, and as this was supposed to be sufficient to explain his symptoms I made a perineal incision and laid the bladder open into the rectum as in the old operation of recto-vesical lithotomy. This measure gave relief, but the patient gradually sank from kidney disease and some localised pelvic peritonitis. At the necropsy a simple ulcer of the rectum was found which had opened through the prostate into the base of the bladder, and which had been attacked by the operation; but 1 inch behind this and to the left of the median line was a second ulcer in the rectum of the same simple character, which had perforated its walls, and so on to and through the bladder. The local peritonitis was caused by this latter ulcer. There was no sign of new growth in either the rectum or bladder. The kidneys were much diseased.

The case above briefly quoted is an example of what, I am convinced, is by no means a rare condition, and to which I drew attention in 1872, when I read before the Clinical Society of London the notes of two cases of recto-vesical fistula, due to simple rectal ulceration, treated successfully by left lumbar colotomy. One of these cases was in a man, aged 64 years when he underwent the operation, and who lived in comfort for six years after it, and died from a ruptured heart at the age of 70 years. After death evidence of cicatricial repair of old ulceration was present in the rectum, with a very small fistulous opening between the bladder and rectum, which was still patent, and through which a very little urine during life had passed at times into the rectum, but this had never been a source of trouble. The second case was of a man, aged 49 years, who had been passing fæces and flatus with his urine for three and a half years before I operated in 1870, and who made a good recovery. One year after operation he wrote: "No wind or fæces have passed into the bladder since the operation, although a little urine still

passes into the rectum." In 1884 he wrote: "The operation has been quite successful, as it has added 14 years to my life. I am quite free from pain, and I feel as strong as if nothing was the matter with me. The contents of the bowel all pass through the opening in the loin; nothing passes into the lower bowel except a little water from the bladder." Since these cases occurred I have had others to support the view they illustrate; for example, in 1882 I had a patient, aged 65 years, who died from pleurisy and œdema of the lung, who 12 years before had passed flatus with his urine without any known cause or any other symptom. This he continued to do for some months, when he got well. At the *post-mortem* examination the evidence of old ulceration of the rectum and of the former recto-vesical fistula was very clear, and there was a complete absence of any local organic disease.

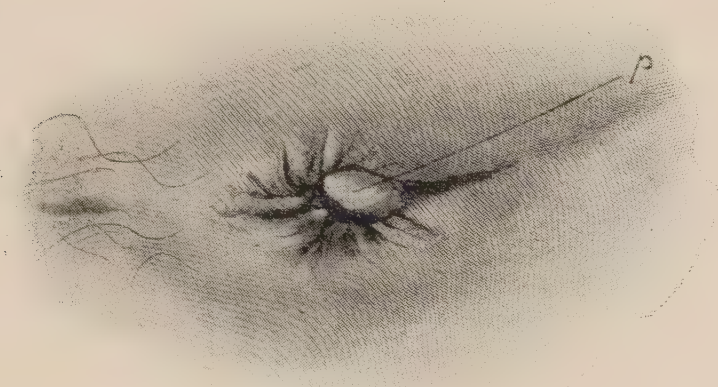
These cases are full of interest, and entirely support the observations I made in 1872, when I reported the two cases of colotomy for recto-vesical fistula, "that ulcerated openings sometimes take place between the bladder and either the large or small intestines, many of which have no connection with stricture of the bowel and even less with cancer."

ON FISSURE OR PAINFUL ULCER OF THE ANUS.

It might have been thought since the symptoms of this affection are so characteristic that either a mistake in its diagnosis or a chance of its being overlooked were most improbable events, and yet it is true that from some cause or other such cases are too often passed over and allowed to drift. They are either regarded as piles by the patient, and so treated on the patient's diagnosis by the practitioner, or the diagnosis is supposed to be confirmed if, after a superficial external examination, anything like a prolapsed internal or a swollen external pile is seen, or even a small prolapse of the mucous membrane of the bowel, or possibly a papilla-like fold of anal integument situated at either the dorsal or perineal extremity of the anus which is mistaken for a pile. Whereas to detect an ulcer a more careful examination of the part is absolutely essential, together with a greater appreciation of the value of the papilla-like fold of anal integument as a guide to an ulcer, for this fold of anal skin or papilla is one of the most constant and valuable indications of this kind of ulcer, whether associated or not with hæmorrhoidal trouble. To determine the

fact of the existence of this ulcer no painful examination is either necessary or justifiable, for a painless external examination, if rightly made, can at once determine the question. In the drawings which are here copied from my lost friend's original,

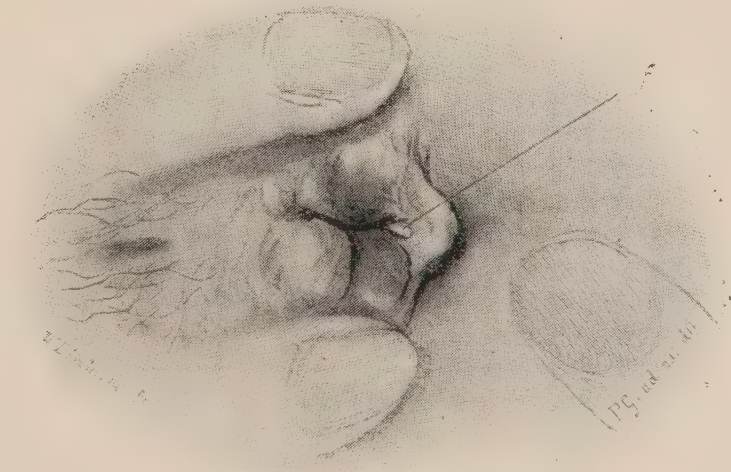
FIG. 4.



Fissure of the anus as seen without the speculum, the characteristic papilla (p) concealing anal ulcer.

the method is well seen, and needs no lengthy description (Figs. 4, 4A, 5, and 5A). With the patient on his side and the thighs

FIG. 4A.

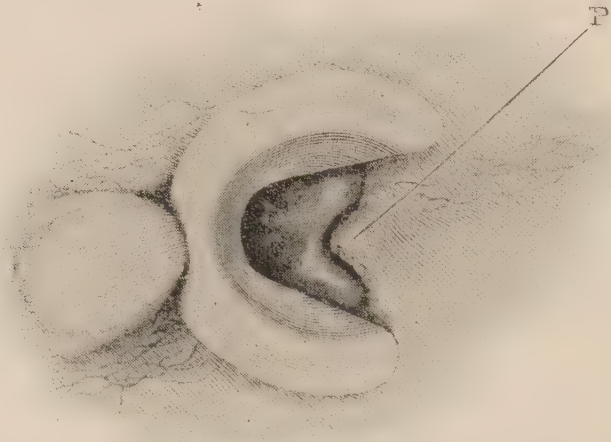


A fissure (f) exposed without the use of the speculum.

well flexed, the buttocks are separated, and the surgeon with the thumb and index finger of one hand laterally draws aside the two sides of the anus, and with the finger or thumb of the other hand raises or pulls down the characteristic fold of skin or papilla

beneath which the presence of an ulcer is suspected, when, if it be present, the extremity of the ulcer or the whole ulcer will at once be seen, even if the ulcer exists alone or is found to co-exist

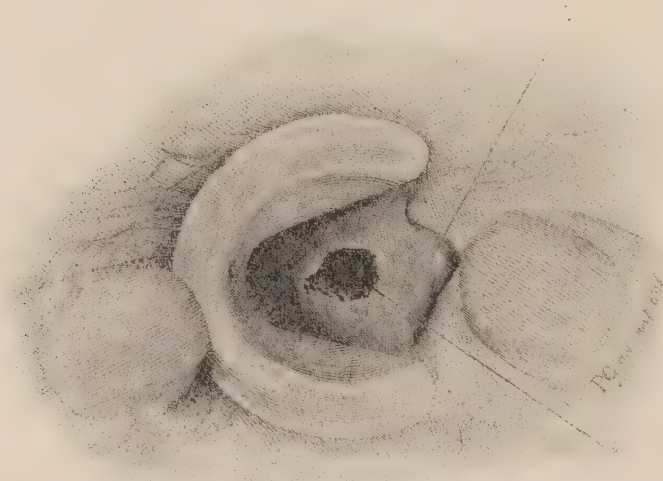
FIG. 5.



Anal ulcer as seen with the speculum. P marks the papilla covering the ulcer.

with external or internal piles, or even with a polypus; for it cannot be too well recognised that cases of piles, prolapse of the rectum, and polypi, when the seat of severe pain, are mostly so

FIG. 5A.

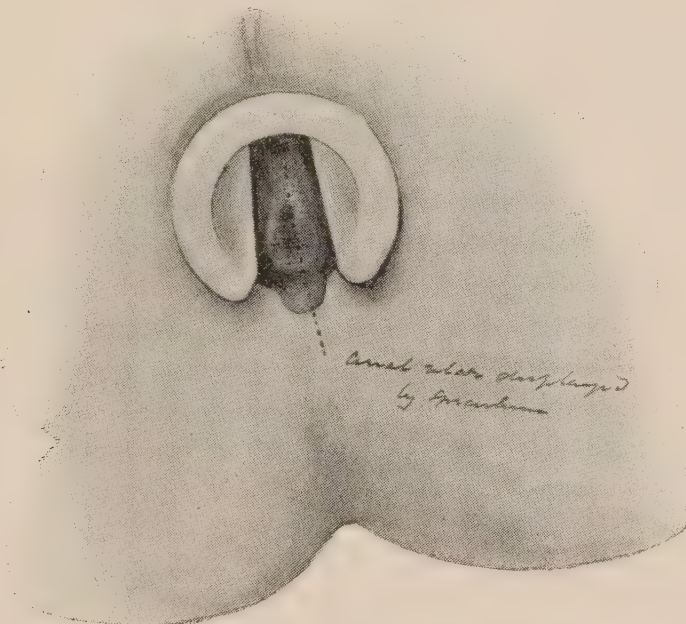


Anal ulcer as seen with the speculum. The papilla (P) has been drawn aside to expose the ulcer (U).

from their being complicated with the painful ulcer; indeed, it is often owing to the grafting of this acute trouble upon an old one that the patient is induced to seek professional advice for his

chronic affection. Should the ulcer be associated with piles or rectal prolapse, the patient will often tell you that since he has had the severe local pains neither the piles nor prolapsed bowel have come down so much as they did formerly, and that he has been able, therefore, to sit down with greater comfort, having been led by these apparent improvements to think that his piles or prolapse had taken a favourable turn; whereas the intelligent surgeon should, in this report of his patient, be led to a different conclusion, and find an explanation of the facts which he may accept from his patient, that the protrusion of the rectal trouble has lessened because the anus has become less patulous from the

FIG. 6.

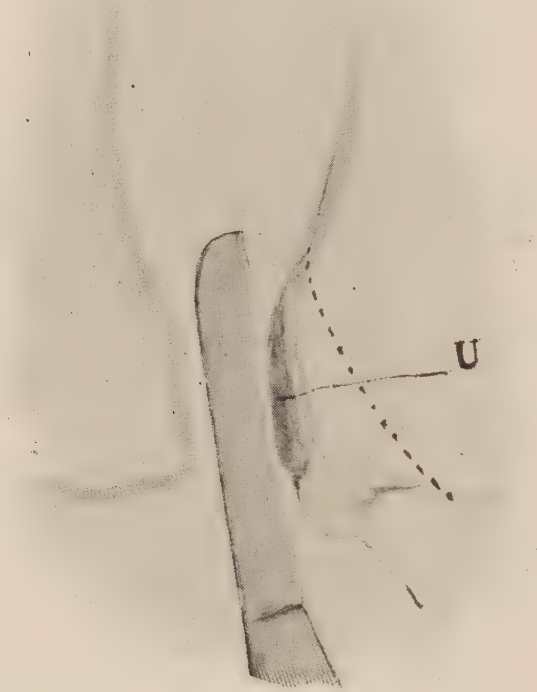


A typical anal ulcer as displayed by the speculum.

spasmodic contraction of its sphincter muscle, which is always associated with this anal ulcer, and as a consequence lessens or forbids the prolapse which formerly occurred. Indeed, whenever a patient complains of sudden accession of anal pain in the act of defecation, and the persistence of a burning, cutting pain for a few or many minutes, or even for hours after the act; whenever a patient who has been known to have piles or prolapse suddenly becomes the victim of this intense local pain and, as a consequence, seeks for relief, the presence of this trouble should be suspected, and no treatment ought to be suggested before such a careful local examination as I have described has been carried out.

When this trouble is grafted on to others, and piles, polypus, or prolapsus co-exist, the treatment of the recent affection should be

FIG. 6A.



The division of the ulcer. U marks the seat of the ulcer.

FIG. 6B.



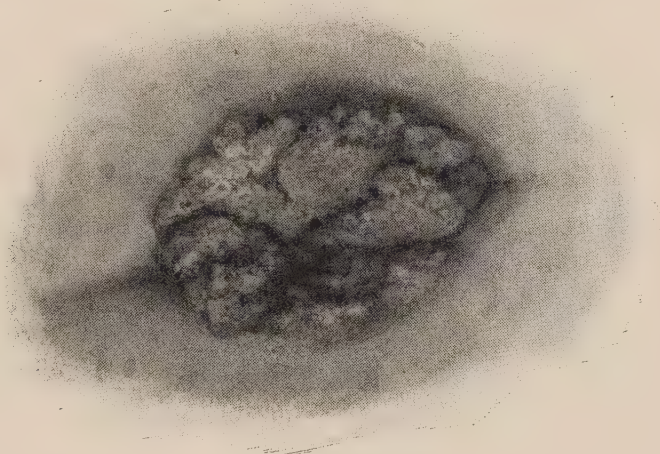
P marks the papilla which covered the ulcer in case illustrated by Figs. 6 and 6A.

included in the treatment of the older trouble, and a cure of both should be secured.

In Mr. Gowlland's drawings are to be seen many examples of anal ulcer associated with piles, prolapse, and polypus. The patient may refuse an examination with the natural dread of serious pain being excited or increased by the introduction of a finger, for he knows too well what torture the passage of a hard motion causes, and that a liquid one is often as bad; but the practitioner can with confidence promise him that no pain shall be caused, for by careful manipulation such as has been described (Figs. 4, 4A, 5, and 5A) no pain need be or should be occasioned.

When the ulcer is once recognised, its cure is soon brought about, if it be uncomplicated, by a forcible dilatation of the anus

FIG. 7.



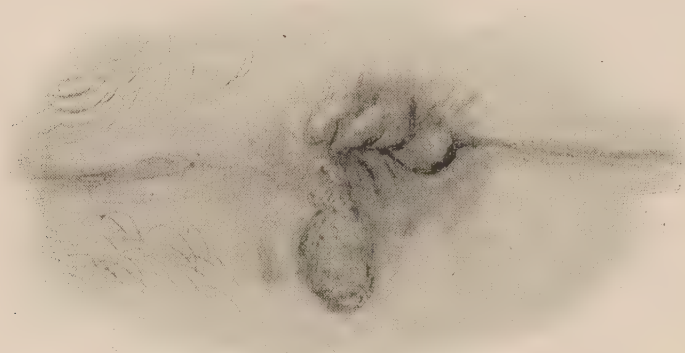
A typical anal wart.

followed by a well-made incision through the whole length of the centre of the ulcer, together with half an inch of the healthy tissue above and below its border (Figs. 6 and 6A), the incision being made to penetrate only through some of the superficial fibres of the sphincter muscle, whereas in slighter cases the forcible dilatation of the sphincter will suffice by itself. If the ulcer has been of long standing, a deeper incision may be necessary than when it is of recent origin, but I have never seen an uncomplicated case of anal ulcer in which the division of the whole sphincter of the anus was required. Figs. 7, 8, 8A, 8B, and 9 illustrate other anal ulcers and growths which must be recognised.

HÆMORRHOIDS, EXTERNAL AND INTERNAL.

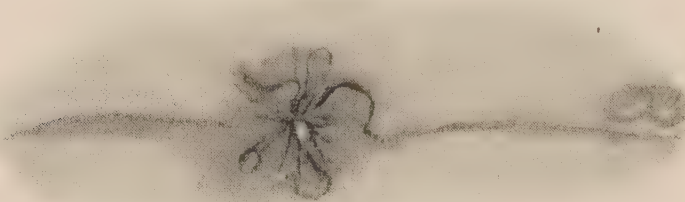
In the estimation of the public almost every anal trouble is regarded as hæmorrhoids, and when the practitioner consulted

FIG. 8.



Typical anal condylomata. The patient was a woman aged 21 years.

FIG. 8A.



Typical anal condylomata. The patient was a woman aged 20 year .

FIG. 8B.

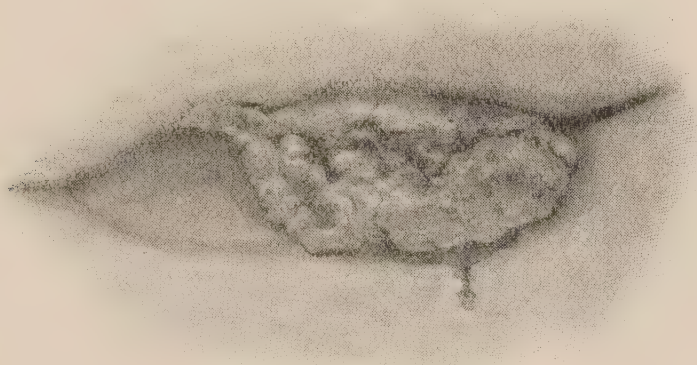


Typical anal condylomata in a male patient.

is satisfied to accept his patient's diagnosis without making a local examination to satisfy himself as to its accuracy, errors

of both diagnosis and treatment must of necessity constantly ensue. It should, consequently, be a rule of practice, whenever a patient complains of supposed hæmorrhoids, for the family medical adviser to ask for a local examination, and, what is more, such should be conceded and carefully carried out before he ventures to prescribe or assumes any responsibility, and certainly before he prescribes the favourite confection of senna and gall ointment. In hospital experience a large number of so-called hæmorrhoids are examples of condylomata the result of syphilis (*vide* Figs. 8, 8A, and 8B), or of anal warts (Fig. 7), but they may be of chancre or of cancerous disease (Fig. 9). In private practice they may be of the same nature, but they may be anything.

FIG. 9.

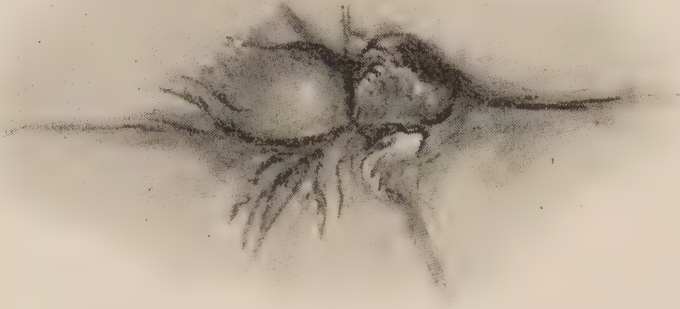


A malignant ulcer of the anus.

A local inspection will reveal much to a surgeon with an educated eye. If the anus and parts about appear to be normal, many possibilities are at once negatived. If loose folds of skin about the anus are visible, the question of the former existence of external hæmorrhoids is naturally raised; if a soft venous swelling is seen, a recent external hæmorrhoid may be diagnosed (Fig. 10); if it be hard, the vein will have become thrombosed; and if it be red and tender, inflamed. If the external anal folds of skin are œdematous or indurated, the surgeon has to decide whether these conditions are due to a syphilitic affection or to some internal rectal disease, and this question can only be decided by an internal rectal examination. If but one indurated or raised skin papilla is present (*vide* Fig. 4), and this is situated at either the dorsal or perineal extremity of the anus, the question of anal ulcer should be at once raised, as has been already pointed out.

Should, however, the surgeon, in making a local inspection, find some prolapse of the mucous membrane of the rectum showing either like the tip of a tongue of mucous membrane (Fig. 11), or as several tips, or as a more or less marked prolapse of one or more masses of mucous tissue with everted and possibly

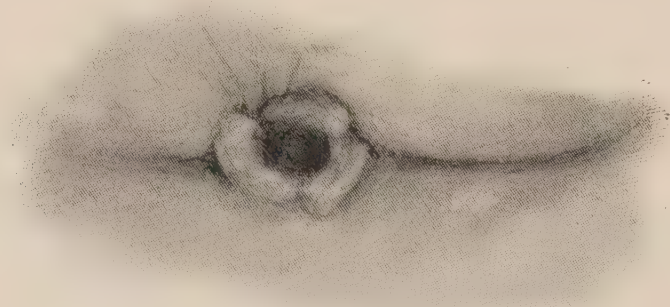
FIG. 10.



Hæmorrhoida vera of three weeks' standing. The patient was a woman aged 54 years.

œdematous anal skin folds (Figs. 11A, 11B), the surgeon has to decide whether the local trouble is one of prolapse of only the mucous membrane of the rectum or prolapse of some true internal hæmorrhoid, or of both tissues together; when bleeding to any

FIG. 11.

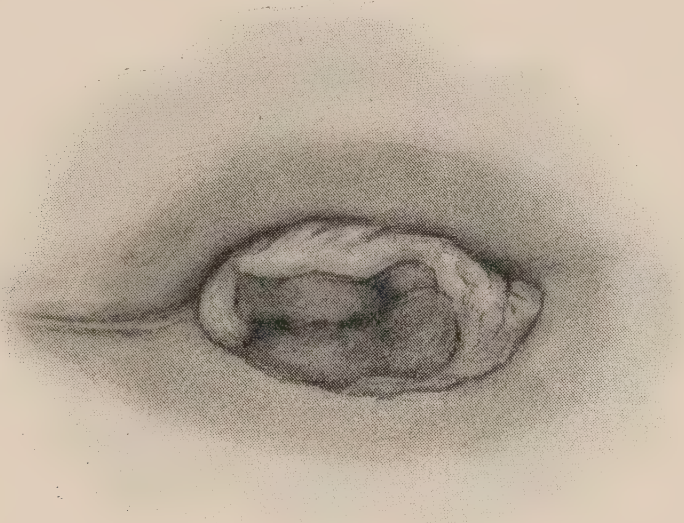


Slight prolapse of the rectum of four years' standing. The patient was a man aged 28 years.

extent complicates the case, the diagnosis is speedily made—for prolapsed mucous membrane rarely bleeds so freely or easily as prolapsed hæmorrhoids—and the venous variety of hæmorrhoid (Fig. 10) is also readily diagnosed from the highly vascular arterial hæmorrhoid. Should only one mass of mucous tissue

project from the anus, the thought of the mass being a polypus should always pass through the surgeon's mind. If the patient be a child, a mucous polypus is the most probable cause, since

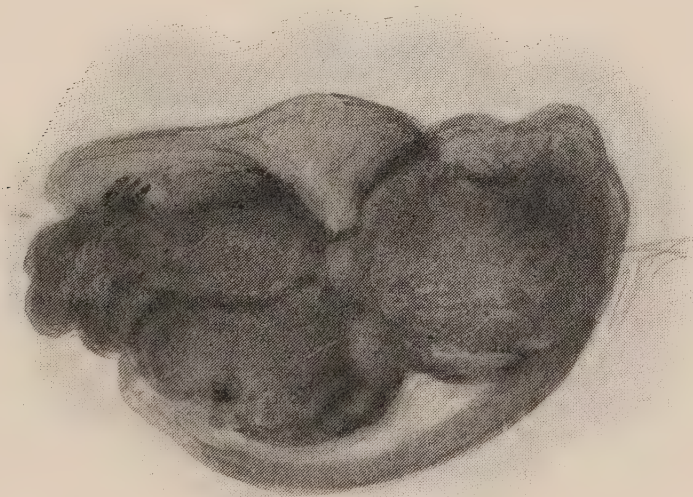
FIG. 11A.



Moderate prolapse of the rectum in a man.

hæmorrhoids in young people are rarely met with; if an adult, some solid fibrous or villous growth is to be expected. But in

FIG. 11B.



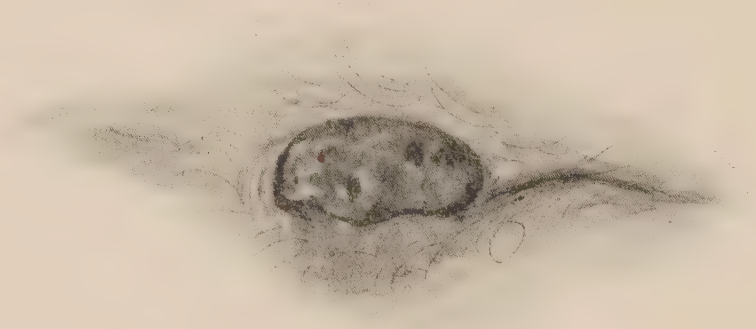
Prolapsed internal hæmorrhoids. The patient was a man aged 36 years.

every example of prolapse of the rectum, whether associated or not with hæmorrhoidal disease, the question of the disease being due to or complicated with the existence of a polypus, single

or multiple, should always be in the mind of the investigating practitioner.

In a popular and clinical point of view hæmorrhoids may be divided into the "bleeding" and "non-bleeding." The bleeding variety is, as a rule, of the internal kind, although if a true external hæmorrhoid ruptures, the varicose vein which forms it may bleed profusely and dangerously (Fig. 12). The internal hæmorrhoid may bleed only when its owner passes a motion, but at times it may do so independently of such an action, and under these circumstances it is certain that some prolapse of the hæmorrhoid exists, although the prolapse may be but slight (Fig. 11A). With respect to prolapse of the hæmorrhoid or hæmorrhoids, all degrees of severity are met with. The hæmorrhoidal masses may vary from one to four or more. The protrusion may only take

FIG. 12.



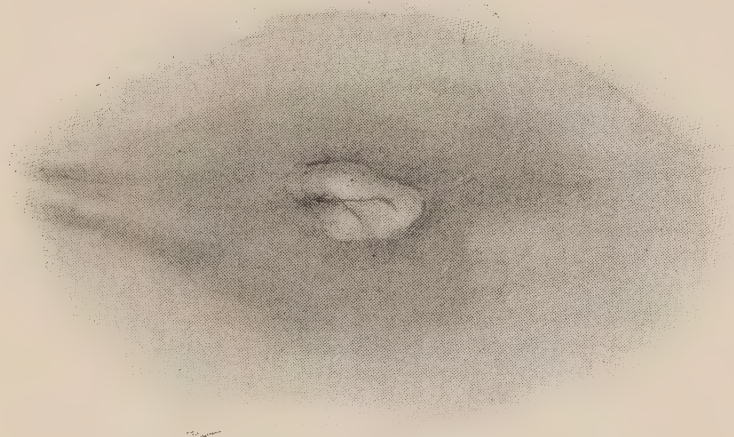
Ruptured external hæmorrhoid. The patient was a man aged 51 years.

place during the act of defecation, or it may recur when coughing, bending forwards, lifting weights, or straining takes place. It may disappear on the patient assuming the horizontal position, to reappear on any standing or sitting posture; or it may be more or less of a constant character, and prone to increase on any exertion.

The amount of possible prolapse in any given case can, however, never be accurately determined before a full enema of warm water or soap and water has been administered to bring the prolapsed hæmorrhoids well into view, and this measure should invariably be taken in every case of prolapse or hæmorrhoids or suspected hæmorrhoids before a definite diagnosis is made or any operation for their cure is decided upon. The enema in bad cases should be as much as a patient can well bear. If the surgeon depends upon

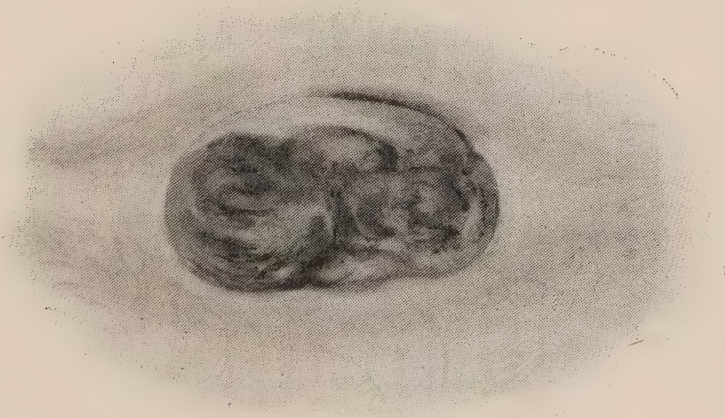
the straining efforts of his patients or upon a small enema he will occasionally only operate upon half the disease. I have seen many cases of failed operations for prolapse and internal hæmorrhoids which I am convinced have been due to a want of proper attention to the practice I am emphasising.

FIG. 13.



After reduction of bowel, or before use of enema.

FIG. 13A.

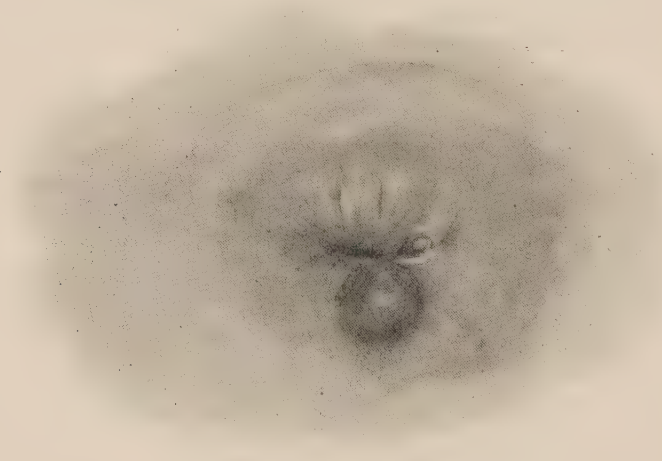


Bowel down after use of large enema. Procidentia recti in a man aged 30 years who had had from a child.

Mr. Gowlland's many drawings illustrating the local appearances of bad cases of hæmorrhoids before an enema and after its administration—two of which are reproduced in Figs. 13 and 13A—demonstrate very forcibly his opinion upon the matter with the necessity of every surgeon keeping it in his mind. The

amount of pain that is present with hæmorrhoids, and even with prolapsed hæmorrhoids, is very variable. A small external hæmorrhoid is often far more painful than a large internal one, and particularly when the hæmorrhoid has inflamed, the extreme sensibility of the anal integument being the probable explanation of the fact. Internal hæmorrhoids, if they do not protrude far enough to be caught by the sphincter, or to become inflamed or strangulated by the sphincter, may be tolerated by their possessors for very extended periods, and nothing beyond inconvenience is commonly complained of. When these become the seat of pain I am convinced that such has been brought about by some small fissure or ulcer having been started by either a large motion

FIG. 14.



Hæmorrhoida vera and anal fissure. The patient was a man aged 62 years.

cracking the diseased anal tissues or some local source of irritation causing ulceration, for it is true that the surgeon will usually detect the presence of a fissure or ulcer in most of the cases of painful hæmorrhoids for which he is consulted, when the history of the case will have told him that the existence of the hæmorrhoids had been recognised for months or even for years (Fig. 14). Such a view of these cases has its practical bearing, for it is more than probable that it is from the want of local cleanliness by washing that these chronic and comparatively painless hæmorrhoids have become acute and painful on account of the ulceration which is excited from the want of due personal attention to this matter. A person with hæmorrhoids should always well wash the parts after defecation. Besides being the source of hæmorrhage

and of prolapse, hæmorrhoids may inflame, and as a result of inflammation they may ulcerate. An external hæmorrhoid often inflames, and when it does, if it is not actively dealt with, it may become the seat of abscess, and if neglected of fistula.

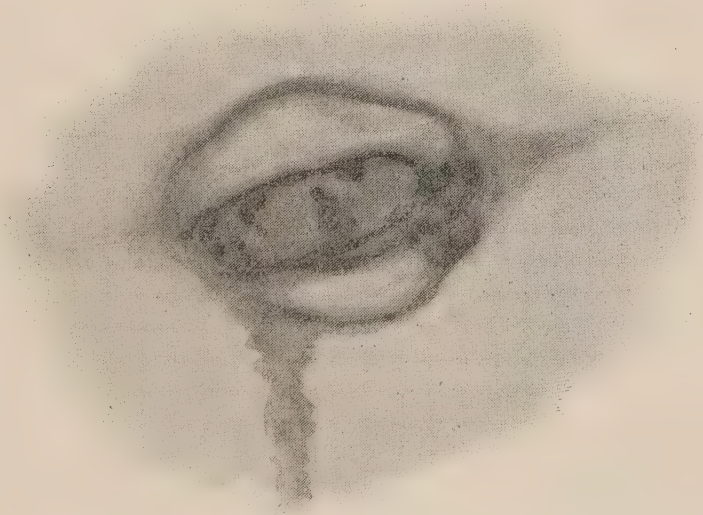
FIG. 15.



Sloughing external hæmorrhoid. The patient was a man aged 65 years.

An internal hæmorrhoid may likewise inflame, and when it does the inflammation is mostly due primarily to its prolapse, and secondarily to some spasmodic action of the external sphincter, this action bringing about the more or less complete strangulation

FIG. 15A.



Sloughing hæmorrhoid after strangulation from prolapse in a man.

of the hæmorrhoid, and the inflammation, ulceration, or sloughing of its substance (Figs. 15, 15A). When an internal hæmorrhoid is thus strangulated it swells rapidly, and soon with the tissues about becomes cedematous and the seat of severe pain; and if this

condition is not relieved the hæmorrhoid will slough, a natural cure by a painful process being the result.

TREATMENT OF HÆMORRHOIDS.

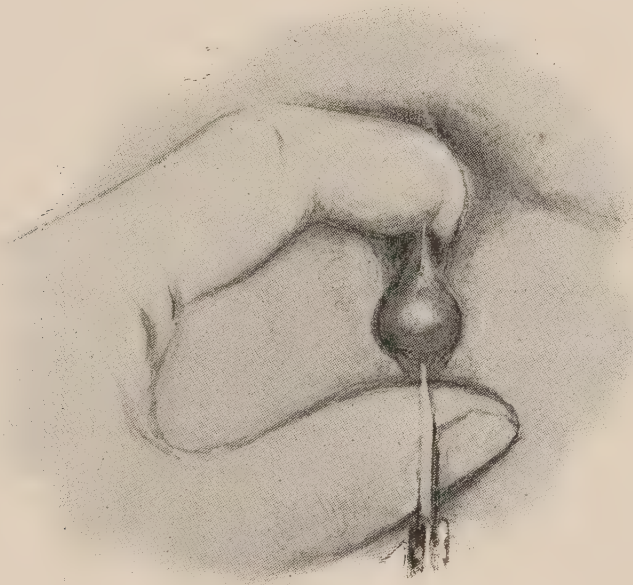
It is to be regretted that the public as a body are too apt to neglect this trouble and to allow it, whether real or suspected, to drift or run its course and only to seek surgical advice when pain has become a serious symptom or bleeding has become more than an occasional accompaniment. This custom is much to be condemned, for hæmorrhoids as a rule are well amenable to medical and surgical treatment in their early stage, and the cases which now pass into the surgeon's hands for treatment would be far less numerous and severe than they often are, whilst in a large number even of serious cases an operation would not be called for. The public are aware that constipation is a prolific cause of hæmorrhoids, and as a consequence they feel quite competent to treat themselves and so resort to strong medicines, or to the quack nostrums which are so freely advertised and forced upon their notice, or they will consult a druggist, who, because he sells drugs and makes them up, is by some occult process supposed by so doing to have learned the difficult duties of a physician and be competent to advise; or they take the prescription of a friend who had been treated for this affection, or the domestic pill of a wife or relation for whom the pill had been prescribed by some eminent man with good effect, but for some trouble which may probably have differed very widely from his or her own. By these means much harm is done, for although hæmorrhoids are caused and aggravated by constipation the use of powerful purgative medicines, such as most quack pills contain, are in a general way injurious and are not to be recommended when the sufferer's family medical attendant would certainly, with greater safety and propriety, supply an efficient remedy as soon as he has satisfied himself of the nature of the case he has to treat, for it must be repeated that an affection which is often considered by the public to be hæmorrhoids is frequently something far different.

Purgative medicine for hæmorrhoids or for any healthy person ought never to be powerful; where such means are required it is in cases in which the bowel has been brought into bad habits and must be led out of them by dieting and the careful use of medically-prescribed medicines, for I believe that the free use of

SOME REMARKS ON RECTAL SURGERY.

quack pills and amateur advice has tended much to the increase of hæmorrhoids. This advice is given with the view of preventing hæmorrhoids and when they are present of relieving them. Much also may be done by dieting. The too free use of brown meats, such as beef and mutton, is to be condemned, particularly by men or women who cannot take much exercise; and even then it is wise to be more free with fish and birds than with beef and mutton. Any adult who takes two liberal meals of brown meat a day is doing his best to generate hæmorrhoids. Well-cooked vegetables are always good. Much potato is not to be recommended, and anything like freedom with alcoholic liquors is to be condemned. I have known people who have had hæmorrhoids,

FIG. 16.



An external hæmorrhoid being laid open.

and some very bad ones, ward off for years, and sometimes for ever, the necessity of a surgical measure for their relief by never taking brown meats and living on fish or birds in moderation, with well-cooked vegetables and fruit, at the same time avoiding alcoholic liquors. If then under these somewhat grave conditions an affection which has grown to be a serious one can be kept in check, surely by the same means adopted at an earlier stage of its formation equal good may be expected. Experience proves that this may be the case.

With respect to the special treatment of external hæmorrhoids it may be said that the loose folds of skin which go by this name

need not, as a rule, be interfered with unless they become the seat of trouble—that is, of fissure between the folds or of ulceration. Should such complications occur the anus should be well stretched and the folds of skin cut off, the lines of incision radiating from the anus and the cut edges of the skin stitched together. Should a varicose vein, as seen in Fig. 10, be the source of trouble, or one ruptured, thrombosed, or inflamed be present it must be treated. If the vein be merely varicose a good clearing out of the bowel by a full dose of castor-oil—say an ounce—will probably be sufficient with a day or so's rest to bring about a cure. If the vein be thrombosed, as seen in Fig. 16, it must be laid open and the clot turned out. Should this measure have been omitted and the thrombosed hæmorrhoid has inflamed and suppurated it must likewise be laid open, otherwise it may become a fistula, the local application of lead and opium lotion helping to complete the cure.

THE TREATMENT OF INTERNAL HÆMORRHOIDS.

When these have become a serious local trouble much may yet be done in the way of their relief as well as in that of cure by following out the suggestions which have just been made under the heading of Preventive Treatment, and when these fail much can also be done by surgical methods. For an internal pile that does not protrude so as to come under the influence of the external sphincter or prolapse beyond it, and only bleeds at long intervals of time and then but little, the preventive treatment I have described ought to be sufficient to retard its growth if not to bring about its cure, and if the patient makes up his mind to follow the treatment out persistently such a hope may be promised and realised. Should the hæmorrhoids, however, protrude so as to come under the influence of the external sphincter this desirable result is not to be expected, and under such circumstances some operation for its cure should be entertained, and particularly if the case be complicated with hæmorrhage. In some early instances the simple dilatation of the sphincter ani—when the patient has been brought under the full influence of an anæsthetic—will be found sufficient to bring about a cure; and as this simple proceeding is one which is always the first a surgeon undertakes when about to perform any operative curative measure upon an internal hæmorrhoid, it is well, when the hæmorrhoidal disease is found to be of recent origin

or very limited, to give it a fair trial. The same line of treatment is likewise applicable to cases in which a small hæmorrhoid is complicated with a fissure or painful ulcer of the anus. When the hæmorrhoid is large or there is more than one, and these are of long standing, this simple dilating procedure cannot alone be expected to bring about a cure, and under such circumstances some additional measures should be undertaken. If the hæmorrhoid be single the application of a silk ligature to its base after its separation from the skin and submucous tissue by scissors is a favourite operation, the base of the hæmorrhoid being transfixed by a needle armed with a double silk ligature, the surgeon being careful, before the ligature is finally tightened, to cut off the distal portion of the strangulated hæmorrhoid to relieve tension. In my own practice I have, however, preferred the removal of all internal hæmorrhoids, whether small or great, by means of the clamp and cautery, the benzene cautery having rendered such a measure more facile. This practice has in my hands been very simple and successful, and I am unable to give any other results than good. I am not prepared to say that these results are better than those secured by the methods which other surgeons advocate and practise, but I must say that they are certainly as good.

Where a single hæmorrhoid exists or several small ones are present the mere ignipuncture by the thermo-cautery in one, two, or more places after anal dilatation has been accomplished often acts very beneficially. The operation by crushing I have entirely given up—it was a mere passing fashion. The treatment of internal hæmorrhoids by the subcutaneous injection of diluted carbolic acid is only in exceptional cases a satisfactory measure on account of its uncertainty and its comparative tediousness. It is only applicable to internal hæmorrhoids, and, as a rule, one hæmorrhoid should be treated at a time. It consists of the injection into the centre of a hæmorrhoid of five or six drops of a solution composed of equal parts of carbolic acid and glycerine by means of a hypodermic syringe. The acid should turn the hæmorrhoid white, and in favourable cases the hæmorrhoid should then wither without pain or sloughing. In other cases the hæmorrhoid sloughs. Its advantages are that it can be employed in patients who require operative measures and fear the cure by operation yet hating the disease, and who are indifferent to the

expenditure of time in being cured. The practice cannot, however, be strongly recommended on account of its uncertainty.

Where internal hæmorrhoids have prolapsed and become extruded from the anus so as to be nipped or possibly strangulated by the external sphincter, the surgeon has a painful and difficult case to deal with. If the strangulation is recent, the hæmorrhoid is of medium size, and the parts are swollen from œdema and inflamed, any attempt to reduce the prolapsed hæmorrhoid will without doubt fail, even though the surgeon may succeed in putting it for a time out of sight, for the hæmorrhoid is certain to come down again within a brief period. Such cases had better be left alone and a lotion of lead and opium applied to the part, unless the surgeon is prepared to attempt a curative measure, and with the patient under an anæsthetic to stretch the anus and reduce the hæmorrhoid, with the hope that the inflammatory condition caused by the constriction of the hæmorrhoid by the sphincter will speedily subside and the hæmorrhoid itself subsequently wither and disappear. I have employed this treatment on many such occasions as these and been well pleased with the result. I am sure it is better than any expectant method. If when this measure has been employed the rectum is found to be loaded, it should be emptied by means of a full enema, and when the operation is completed a morphia suppository should be introduced and belladonna ointment applied to the anus. If the strangulated parts have already become gangrenous or have sloughed (Fig. 15A) the treatment I have alluded to is inapplicable. In such cases the parts must be kept clean and treated locally as required.

PROLAPSUS RECTI.

Prolapse of the rectum to variable degrees of severity is so frequently associated with hæmorrhoids that one affection is often mistaken for the other and where the prolapse is not severe it is as amenable as hæmorrhoids to local treatment. When the case is so mixed the presence of the hæmorrhoids is the probable cause of the prolapse, and from this connection of the two affections it is always to be remembered that however troublesome prolapse of the rectum may be it is rarely an affection by itself but is the result of some definite cause which has to be made out (Fig. 17). Hæmorrhoids and polypus are the more common causes of this

affection, but rectal growths of all kinds—polypoid or sessile—bowel irritation of all degrees, ulceration and other conditions of the bowel, bladder, penis, or similar parts which induces straining, may bring it about. It is likewise often met with where from some cause or other the sphincter ani has lost its power, as in cases of rectal fistula requiring serious or extensive operations or from the atony of the aged. In the treatment of prolapse the removal of its cause is the one principle of practice to be followed, although when the local affection is so severe as to require treatment it should be dealt with much in the same way as has been described for the treatment of prolapse associated with hæmorrhoids. In

FIG. 17.



Procidentia recti of five years' standing associated with bleeding at times. It could be returned by pressure. The patient was a woman aged 27 years.

cases in which there does not seem to be any necessity for the removal of the prolapsed and redundant mucous membrane and yet the prolapse is extreme, the linear cauterisation of the prolapsed bowel with the thermo-cautery is a very valuable method of treatment, care being observed not to destroy more than the mucous membrane of the prolapsed bowel before it is returned to its normal position; when removal of the redundant and prolapsed mucous membrane is called for it should be carried out by taking away vertical folds of the tissue, each fold alternating with healthy tissue. In acute prolapse or procidentia there is at times some difficulty in maintaining the reduction of the bowel

after it has been affected; in such cases I have found the use of an anal plug for a few hours of much use, and the one made of vulcanite, such as I have employed for years after a lumbar colotomy, answers admirably; it is about from $2\frac{1}{2}$ to 3 inches long and about $\frac{3}{4}$ inch wide. It should be kept in position by means of a T bandage and the buttocks should be drawn close together also by a bandage.

Mr. ALFRED COOPER agreed with the author as to the importance of making sure of the course of the track of a fistula, a point which was often missed. If a surgeon find an external and an internal opening, and had laid the intervening track open, he might think he had completed the operation, though, as a matter of fact, branch sinuses might still be present which would require laying open before a cure could be effected. In the old days, when there were many openings around the bowel, it was the custom to push the director into the bowel through the mucous membrane in any direction, slitting up each track, and thus entailing the risk of faecal incontinence. It was at present generally recognised that usually there was only one internal opening which it was most necessary to discover. With respect to hæmorrhoids, having practised the ligature for upwards of 35 years with never a bad case, he was naturally a great believer in it. He had tried other methods, including Whitehead's operation, but he had come back to the ligature, which, if properly done, *i.e.*, including as little tissue as possible in the ligature, caused very little subsequent pain or inconvenience. An important point was whether bleeding hæmorrhoids relieved headache, &c., and he had seen very serious results from operations under these circumstances; indeed he had known death from apoplexy result within a few weeks after an operation on hæmorrhoids. That was a point to which attention was not sufficiently paid by surgeons in considering the advisability of an operation. Another important point was the question of operating for fistula in patients associated with the existence of phthisis. He had seen many cases in which chest symptoms had been followed by fistula, and the surgeon had operated, with the result of causing rapid death of the patient. As long as the fistula was left alone it appeared positively to assist the patient. Passing on to the subject of fissure, the author had not mentioned that there were a great many cases in which there was not only a tag outside but also a growth inside. If the internal growth were not removed at the same time the patient's subsequent condition might be even more painful than before the operation. When this condition became really bad he thought it was necessary to divide the external sphincter as a whole. The author had not by any means laid too much stress upon the necessity for a careful examination in all cases of rectal trouble. He recalled the case of an actor who had been to no less than eight members of their profession, and six of them had not examined him at all. These had all prescribed the same thing, *viz.*, gall ointment and confection of senna. The other two did examine him, and both declared it was fissure, but on examining the patient himself he found a bone, the rib of a hare, impacted in the rectum. He got this out, and subsequently opened the abscess which formed. He added that very little was actually known about perforating ulcer of the bowel in this

situation, so that the subject was one to which he had listened with great interest.

Mr. GOODSALL mentioned that he had seen many of these drawings done. It was Mr. Gowlland's intention, he believed, to publish a work on rectal surgery, but the time he had devoted to the drawings had prevented him from giving the necessary time to the literature of the subject. He rejoiced to find that these admirable drawings had been given to the profession. He agreed with what had fallen from the author in respect of the necessity for careful examination in every case, but he himself preferred the patient to be on the right side, the examination being made with the left forefinger, so that the right hand was left free for any operative manœuvres that might be necessary. Moreover, if the patient's right arm were placed completely behind his back he would be less able to move at times when one would much rather he remained quiescent. He pointed out that 90 per cent. of diseases of the anus and rectum were situated within 2 inches of the anal margin. Men came to St. Mark's for the practice there, and he frequently observed that for purposes of examination they introduced the finger 3 or 4 inches. The orifice of a fistula was usually within 1 or 2 inches, a fissure within three-quarters of an inch, and a pile not more than 2 inches, polypoid growths rarely exceeding 1 inch. Cancer might be anywhere. Stricture, as a rule, was within $2\frac{1}{2}$ inches, so that there were two mistakes to be avoided, viz., non-examination, the patient's statement being accepted by way of diagnosis, and, secondly, introducing the finger too far into the rectum. He agreed that as soon as ischio-rectal abscess was found to exist, it should be freely opened, the more freely the better, thus giving the patient the best chance of recovering from the disease without the formation of a fistula. He himself usually adopted a T-shaped incision, because the central part of the incision would then be the last to heal, allowing the lateral parts to come together. In abscesses due to inflamed follicles, usually two or three in number, but occasionally as many as eight or ten, a T-shaped incision involving only the skin gave excellent results. With more deeply seated ischio-rectal abscesses the incision would have to be much deeper, the incision extending right across the induration in one direction, followed by a second incision at right angles from the centre of the first incision and extending outwards to the outer margin of the induration. There was usually very little bleeding. After the abscess had been opened, the patient should sit in warm water for 20 minutes every night and morning. He recalled the case of a woman in which he had to go three-fourths round the ischio-rectal fossa, for the abscess appeared as if it were about to burst into the vagina. He was afraid at the time that he might have interfered too much with the blood supply, but healing had gone on very satisfactorily. He remarked that the internal opening of a fistula was usually within half an inch of the anus, *i.e.*, between the external and internal sphincters. It was a good rule to draw a line from one tuberosity of the ischium to the other. This would traverse the anus. Then any external opening posterior to that line would probably correspond to an internal opening in the middle line dorsally, whereas an external opening anterior to that line would very often be found at a point exactly opposite to the external opening. Another way was to introduce some vaseline into the rectum after evacuating the bowel. If this were rubbed round the rectum some of it would soon make its appearance at the external opening. Hæmorrhoids were mainly due

to constipation. This condition often dated from youth, then the constipation would cause a fissure which would induce the patient to avoid action of the bowels because of the pain following defæcation. This frequent over-distension of the rectum certainly promoted the development of internal piles; and on examining such cases when piles had formed, the scar of the old fissure could sometimes be detected. The course was constipation and fissure, then congestion of the lower part of the rectum, followed by piles. Subsequently the piles came down and stretched the sphincter, curing the fissure, but as the fissure got well the piles came down more easily. He described cases of piles as consisting of—(1) cases in which a cure could be effected by simple treatment, the piles bleeding but not coming down; (2) cases in which they occasionally came down, with or without bleeding: they could be easily pushed back and remained up until the next action of the bowels. In the second class of cases a cure could often be effected without operation. If, however, they were always coming down, not only when the bowels acted but at other times also, then an operation should be performed.

MR. SWINFORD EDWARDS said he had known the late Mr. Gowlland for some years, when he was house surgeon at St. Mark's. He was a brilliant operator in minor rectal surgery, especially in fistulæ and piles. Anyone might undertake the treatment of piles, but it took an experienced man to treat fistula effectually, and Mr. Gowlland was such a one. With regard to pruritus ani, which the author had alluded to as a symptom of rectal trouble, he said that at least 50 per cent. of such patients showed no sign at all of rectal disease. Forcible dilatation combined with scraping of the eczematous part would usually effect a cure, but the dilatation required to be kept up for some time in order to thoroughly paralyse the sphincter. The author was in favour of passing a probe at once in examining cases of fistula, but this, he submitted, was unnecessary in 99 out of 100 cases. Moreover, it gave pain and taught less than the finger of the experienced surgeon, which would point out the site of the internal opening, especially if they followed the rule laid down by Mr. Goodsall. With regard to opening a sinus, which ran above the internal opening, he took exception to the author's injunction to do this "in every case." If it was directly beneath the mucous membrane, then it should be laid open, but otherwise to do so would divide the internal sphincter, with the consequent risk of incontinence. It could be cured by injections after the other sinuses had been thoroughly laid open. He remarked that plugging of the wound was but rarely necessary, a light dressing or the passage of a vaselined finger answering every purpose. He could not say he had ever come across a case of fæcal extravasation due to perforation of a rectal ulcer, but some years ago, in a case of rectal disease, his house surgeon, by his directions, had given an enema, with the result that he had injected into the peri-rectal tissues, stripping them up for some distance. It went hard with the patient, for gangrene ensued, but ultimately he did well. He observed that the author advocated lumbar colotomy in recto-vesical fistula. He himself had operated by different methods. By left inguinal colotomy, previously exploring the abdomen to ascertain the condition of affairs. This, he observed, was a reason for preferring iliac to lumbar colotomy, inasmuch as it enabled one to explore the abdomen. Then, again, the recto-vesical fistula might be attacked from the bladder or the rectum. He had done a posterior proctotomy, exposing the end of the fistula in the rectum, with galvano-

cauterisation of the sinus. He had also done suprapubic cystotomy and cauterised the fistula from the bladder. The author had spoken against the treatment of piles by injection. He admitted that it was only to be recommended in suitable cases, but in such cases, viz., those of uncomplicated internal piles, it answered very well. He himself used a solution of carbolic acid in glycerine and water (1 in 5), with very satisfactory results. Pure carbolic acid had been recommended, but that was cure by sloughing, a very painful process, and one to be avoided. He had treated over 100 cases with this solution. He advocated dealing with all the piles at one sitting, and, if necessary, the patient could come back for further treatment later. He himself operated on inflamed and strangulated piles by forcible dilatation, incision, and ligature without any trouble, and he saw no drawback to this procedure. He said that forcible dilatation of the rectum had revolutionised rectal surgery and had greatly facilitated treatment.

Mr. BATTLE observed that the author appeared to have had opportunities of examining patients, *post mortem*, who had suffered from perforating rectal ulcer, and he asked whether the examination in any case showed the existence of the condition known as ulcerative colitis. He had seen two cases of acute peritonitis from perforation of rectal ulcers, and once fatal hæmorrhage from ulceration into an artery in the recto-vaginal septum. In these there were other ulcers indicative of this condition. He asked whether the author scraped the track which had been laid open after operation for fistula. He himself had done this as a rule, and he thought it hastened healing. In many cases there was such a lot of indurated tissue around the fistulous track in old standing cases that healing could only take place with difficulty, and he had been accustomed to cut freely through this with good results. As showing the advantages which are occasionally met with in the examination of the rectum, he related the case of a poor woman who had once come to his out-patient department with syphilitic stricture of the rectum, and who came again a year later complaining of stoppage of the bowels. He expected to find that the stricture had closed, but on making an examination he found that the obstruction was due to the impaction, in the stricture, of three golden sovereigns, which he withdrew by the aid of forceps.

Mr. PEARCE GOULD (Vice-President, in the Chair) asked the author whether he had any experience of the method of immediate suture of the divided surfaces after operation for fistula. This method had been largely practised in Ireland. He pointed out that there was an incidental advantage in scraping the fistulous track in that while so doing the granulation tissue from any collateral track would pout out on the surface, and thus betray its existence. He agreed that the clamp and cautery method of dealing with piles was quite satisfactory and trustworthy, and he had found that there was less pain with it than with the ligature. He asked the author whether he had had any experience of Whitehead's operation. While some spoke very highly of it he thought that most London surgeons viewed the operation unfavourably. He said he himself always taught that when a patient with piles complained of acute pain this was a certain indication of the existence of some complication, uncomplicated piles being a singularly painless affection. He commented on the contrast between Mr. Goodsall's remark that if a patient with a fissure got prolapsing piles these would cure the fissure while intensifying the piles, and the

author's statement that if a fissure occurred in a patient with hæmorrhoids it improved the hæmorrhoids and lessened the prolapse, though it caused much suffering.

Mr. BRYANT, in reply, expressed his satisfaction at having brought the drawings of the late Mr. Gowlland before the Society. He pointed out that his paper was simply based on his own experience in respect of diseases of the rectum, and did not purport to be an exhaustive description of the subject as a whole. He could quite understand that Mr. Cooper, having learned to deal with piles by ligature, did not care to change. The operation he preferred for piles was that of the clamp and cautery, and he knew no better. Surgeons accustomed to a particular procedure tried other methods for a short time, but soon returned to the operation with which they had made themselves most familiar. He had not said anything about Whitehead's operation because his experience had not been large enough to enable him to form any strong opinion. He admitted, however, that he did not like it, but thought that this might possibly be due to the fact that he was not as used to it as he was to his own method. With respect to operations on phthisical patients he said he had taken the trouble to study the matter years ago by registration of a long series of cases, and had been struck by the fact that so few cases of fistula came to the hospital associated with phthisis. It was true that those who did were marked and typical cases. Even in these, however, he had never been able to trace any harm from the operation; in fact, he looked upon it as an advantage in ridding the patient of a drain. He could safely say he had never been able to connect the rapid progress of phthisical disease with any preceding operation for fistula. With respect to the treatment of anal ulcers he still failed to see any necessity for completely dividing the sphincter. He had done so in old standing cases with much induration in which he had not only gone through the sphincter, but had taken away the edges of the ulcer wall. He agreed with Mr. Goodsall that division of a long sinus extending high up the bowel, as a routine practice, was a mistake. He dissented from the statement that fistulæ only had one internal opening. He admitted that, as a rule, there was only one such opening, but to this rule there were exceptions. In one of Mr. Gowlland's drawings there were several, all communicating with the bowel. He presumed that even Mr. Edwards would not deal with a strangulated pile while acutely inflamed. Later on, of course, if it began to slough it might be dealt with on general principles. He thought that surgeons did not recognise as they should do the occurrence of faecal extravasation from rectal ulcers. He had seen many such cases. Ulcers might occur in this situation just as they occurred in the stomach, the duodenum, and the small intestine. He had not recognised them as forming part of the condition known as ulcerative colitis, though in one case this condition had misled him into performing colotomy for obstruction, of course without permanent relief. He had alluded in his paper to the value of scraping thoroughly the sinus in every case of fistula, and he looked upon it as an essential point, especially in phthisical subjects.

February 7th, 21st, and March 7th, 1898.

LETT SOMIAN LECTURES: THE AFFECTIONS OF THE URINARY APPARATUS IN CHILDREN.

By JOHN H. MORGAN, M.A. OXON., F.R.C.S. ENG.

LECTURE I.

INTRODUCTION.

MR. PRESIDENT AND GENTLEMEN,—It is no small honour to be chosen by the Council of this Society to follow in the steps of such distinguished men as are numbered in the roll of former Lettsomian lecturers, and in thanking the Society for the distinction so kindly proffered, I trust that the selection of my subject may not prove unworthy of the traditions handed down by my predecessors. I was guided by the fact that whilst many have chosen the diseases of childhood as the subject of these lectures, many also have given valuable researches into the treatment of diseases of the urinary organs. I was confirmed in my choice by finding to how small an extent was any special reference made to the diseases of the urinary tract in children, and yet how much scattered observation and record there existed on the subject. It will be my earnest effort in these lectures to collect and review much of this wayside literature, and to present it to you with such observations of my own as an experience of more than 20 years may seem to warrant.

ABNORMALITIES OF KIDNEYS.

Like other organs of the body, the kidneys are not exempt from certain eccentricities of development, but as the majority of instances have been found in the bodies of adult persons who have died from causes unconnected with such conditions, it is seldom that these abnormalities have to be reckoned with in early life. A writer (Dr. Englisch) in the 'Wiener Medicinische Zeitung' states that a foetus may attain the age of from seven to eight months with the kidneys wanting or rudimentary, the

ureters obliterated, and the bladder undeveloped. In some 40 cases he had found atresia of the urethra, or absence or defects of the ureters, the foetus reaching from eight to nine months; and Rayer and others have recorded the absence of kidneys in the foetus. But notwithstanding some cases which have been published, it may at once be said that the subjects of such deficiencies are not viable.

A recognised variation from the normal is found when the two organs are united, either by renal tissue or by a fibrous band, constituting the horse-shoe kidney, the convexity of which always faces downwards, and which lies transversely over the lumbar spine, generally rather lower than the level of the normally placed gland. There are usually two ureters, which pass in front, but sometimes behind, the organ, and the vascular supply is also double. Of this condition there are occasional variations, but so far as regards our present subject the horse-shoe kidney is of interest only as an abnormality, since I have not met with an instance where, in the case of a child, it has been in itself the source of disease or of difficulty in the diagnosis of other affections. The rarity of its occurrence may be judged by the figures of Mr. Morris, who found only nine instances in 14,318 *post-mortem* examinations, or about 1 in every 1,600. From the records of the *post-mortem* books of the Hospital for Sick Children, Great Ormond Street, extending over 20 years (1878–1897), which have been searched by Mr. Templeton, the surgical registrar, for this purpose, out of 2,594 necropsies only three instances of horse-shoe kidney are noted. In one the left ureter was dilated, and one was complicated by imperforate anus.

The kidney may retain more or less its lobulated foetal form into adult life without any impairment of efficiency.

ABSENCE OF KIDNEY.

The absence of one kidney and a corresponding hypertrophy of the other is a possibility that may have to be reckoned with. The left is by far the most frequently found to be defective. Mr. Morris has been at much pains to estimate the proportion of individuals in which this congenital atrophy of one gland occurs, and from a large number of figures he reckons it as happening in one out of rather more than 3,500. Quoting again from the

hospital statistics there are five instances of aborted kidney in the *post-mortem* books of the Hospital for Sick Children, Great Ormond Street. Two were on the left side, two on the right, and in one the side is not noted. Two were complicated with imperforate anus and one had the foramen ovale patent; in another the suprarenal capsule was absent and there was also hypospadias. In a girl, aged 10 years, who died after operation for cleft palate, the left kidney was atrophied and the left ureter dilated. One instance occurred in which the right kidney was small and consisted of three lobes, and the left kidney was a bag of pus, the child dying from uræmia. When the kidney is absent the corresponding suprarenal capsule is also wanting in one out of every 10. In Virchow's 'Archiv,' 1838, Breuner collected records of 48 cases of congenital absence of one kidney, but in all these, except five, the suprarenals were present. He found also that in one-third of his series there was some malformation or arrest of development in one or other of the genital organs. Out of 46 cases of single kidney quoted by Rayer and analysed by Mr. Morris four were in young persons between 4 and 15 years old, two were in foetuses, and one in a foetal monster. In a boy, aged 5 years and 4 months, who died in the Hospital for Sick Children, Great Ormond Street, the left kidney alone was present. It weighed $4\frac{3}{4}$ ounces, which is about the weight of the two normal kidneys of a child of the age of $5\frac{1}{2}$ years. The pelvis and ureters were proportionately large. The organ appeared to be quite healthy. There was no trace of a right kidney or ureter, and no indication whatever of a ureteral orifice on the right side of the bladder. A case of extreme congenital atrophy of one kidney occurred in a new-born male with imperforate rectum who lived only five days. The right kidney measured 1 inch and its pelvis was much dilated; the left kidney measured only one-third of an inch and was smaller than a haricot bean.

ABNORMAL POSITION.

In Mr. Morris's work and in the volumes of the 'Transactions of the Pathological Society' will be found many instances of abnormal position of a single kidney, but although the possibility of such an occurrence may be borne in mind in the diagnosis of obscure tumours they are exceedingly rarely met with and need

only be suspected when there also exists some one or other congenital malformation such as was found to occur in the two cases mentioned.

Roberts states that in 21 cases of congenital malposition of the kidney which he had been able to collect and to compare the abnormality was in every instance confined to one kidney, and the left was much more commonly affected than the right (the left in 15 cases and the right in six).

The most frequent of these deviations was to find the kidney lying obliquely on the sacro-iliac synchondrosis. In some of the cases the organ was fixed beside the uterus or transversely between the rectum and bladder or across the prominence of the sacrum. Such abnormalities have led to mistakes in diagnosis, and even of treatment in the case of adults and in women to trouble in parturition. Only two instances are to be found in our tables. In a boy, aged 4 years, who died from diphtheria, the right kidney lay on the brim of the pelvis, and in a girl of the same age the kidneys were fused and lay over the sacral prominence. There were two ureters and the vascular supply was abnormal, but in children it is so easily possible when the muscles are relaxed by an anæsthetic to examine the abdomen, that the absence of a kidney from its normal position or its presence in an unusual one would hardly fail of detection if once suggested. It is of the greatest importance, in considering this question, that the condition of the organs of generation should be carefully examined, since they frequently exhibit concomitant variations where the kidneys are abnormal. Dr. Guttman * quotes the case of a boy, aged 15 years, with right kidney and ureter wanting as well as the right vesicula seminalis and vas deferens; and in a female, aged 20 years, in whom the right kidney and ureter were absent, the external and internal organs of generation were very defectively developed.

Although instances of complication from this condition are very rare it is one that it is important to bear in mind when dealing with cases of sudden and complete suppression of urine, since in such cases it is possible that one kidney is congenitally absent and the remaining ureter obstructed. Of this Mr. Jonathan Hutchinson has related two instances,† and another is described by Mr. Pick. Especially is it important, both in adults and in children

* 'The Lancet,' May 19th, 1883, p. 875, quoted from Virchow's 'Archiv.'

† *Ibid.*, July 4th, 1874, p. 1.

when the question of nephrectomy has to be entertained, that all indications of the absence or atrophy of one kidney should be carefully regarded. Although some cases of movable kidney have been reported as occurring in children where the gland is suspended in a peritoneal fold of its own, the mesonephron, and where the vessels are of undue length the condition so rarely gives rise to symptoms as to require no discussion.

ABNORMALITIES OF URETERS.

The ureters show frequent aberrations from the normal type. Dr. Ewart has described a case where each organ had two separate ureters which began in distinct pelves and terminated independently in the bladder. All four were pervious. Sometimes two ureters leaving the pelvis of the kidney unite before entering the bladder at the usual situation. This may be seen in a specimen from a child in Charing-Cross Hospital Museum. The left kidney has a second ureter, which arises from the pelvis a good deal higher than the other, which commences at the usual situation. This second ureter runs almost a straight course downwards and joins the proper duct at a right angle about half an inch before its entrance to the bladder. In five instances of double ureter noted in the books of the Hospital for Sick Children, Great Ormond Street, four were on the right side and one on the left. In no case were they the source of disease. Mr. Shattock* regards doubling or trebling of the ureter as a reversion to a lower type. In amphibia there are as many ureters as there are segments of the mesonephric kidney. It may be assumed that the portion of the kidney in connection with the superior of the ureters represents a persistent segment of the mesonephros with its appertaining duct, which has remained functional and supplementary of the metanephros or permanent kidney with which it retains its primitive continuity.

But it is with regard to their causative relations to congenital hydronephrosis that the abnormalities of the ureters are of special interest. In the case of cystic kidney removed by abdominal section and presented by Dr. Day to the Hunterian Museum the ureter was represented by a fibrous cord which was traced down to the bladder, and it seemed probable that the impervious ureter

* 'Transactions of the Pathological Society,' vol. xxxvii, p. 289.

was a congenital defect and the cause of the dilated condition of the kidney. Another case in which cystic degeneration of the left kidney took place during intra-uterine life is found in the 'Transactions of the Pathological Society of London,' vol. xxxi, p. 187, where the condition is ascribed to a valvular fold of mucous membrane of the ureter. On the right side the ureter was doubled to within half an inch of its lower end. The anus was imperforate and the bowel transposed. In another instance the left kidney was converted into a cyst in which a few small patches of secreting structure were left and lay in the angle between the diverging common iliac arteries, the ureter was short, narrow, and patent, but its orifice was no larger than a pin's hole and placed inferiorly. In 20 out of 52 cases of hydronephrosis Sir W. Roberts found a congenital malformation; in four the ureter was imperforate; in three it entered too obliquely into the pelvis of the kidney; and in two a supernumerary renal artery crossed and compressed the ureter near its origin. Four of these cases lived for periods varying from $5\frac{1}{2}$ years to 20 years, and Dr. Hare's patient, where both ureters were coiled on themselves near their origins and adherent to the lower part of the dilated pelvis, thus forming a valve-like obstruction, survived to the age of 38 years. The remainder died at a very early age.

HYDRONEPHROSIS.

Among the necropsies at the Hospital for Sick Children, Great Ormond Street, there were 12 cases of dilated pelves or hydronephrosis. Two of these were complicated by imperforate anus, one by harelip, and another by cleft palate. To account for the gradual occurrence of hydronephrosis, Roberts assumes that the impediment was at first incomplete though the malformation was congenital, and that its effects were not fully developed until a subsequent period, and then probably with extreme slowness. As put by Mr. Greig Smith, "complete obstruction to the urinary flow leads to atrophy rather than dilatation; stricture varying in narrowness predisposes to dilatation." It is probably due to this that in many cases, especially when unilateral, the tumour is small and gives rise to no symptoms, whilst in intermitting cases the swelling will often attain enormous proportions.

In several of the London hospital museums are specimens of

hydronephrosis in young persons due to phimosis, and Mr. Morris and Dr. Alexander James have both pointed out that dilatation of the ureters and pelves may be the result of increased frequency of micturition, which, by exciting frequent contraction of the walls of the bladder and frequent closure of the vesical orifices of the ureters owing to the anatomical arrangement whereby the ureters traverse the parietes of the bladder, thus occasion frequent resistance to the outflow of urine from the ureters. The same explanation may account for the dilated and tortuous condition of the ureters which is generally found to exist in cases of ectopia vesicæ, when, as can be seen, the discharge from the orifices of the ducts is constant.

Newman describes a specimen from the body of a stillborn child in which a cyst of about the size of a walnut completely occluded the right ureter, and caused enormous distension of the renal pelves, and a similar case occurred at the Hospital for Sick Children, Great Ormond Street, where both kidneys and ureters, which were double on the right side, were dilated in consequence of a small cyst which was found in the bladder, and a few specimens are recorded as resulting from an imperforate urethra. Sutton has recently described four cases of congenital hydronephrosis, in two of which the dilatation of the pelvis was due to the minuteness of the opening of an inadequate ureter; in a third, which was obtained from an infant, the right kidney only was present, the infundibula, pelvis, and ureter were widely dilated, and at a point where the ureter opened into the bladder there was a small circular diaphragm-like valve, which, though offering no obstruction to the flow of fluid from the ureter into the bladder after death, probably acted as a mechanical obstacle during life. He further suggests that compression of the penis between the thighs, or between the thigh and pelvis when the legs are flexed on the trunk during foetal life, might explain the retention which gives rise to prenatal hydronephrosis.

These being the main congenital causes of hydronephrosis, it is important to notice the frequency with which both kidneys are affected. Out of 20 cases collected by Sir William Roberts, in 13 the condition was bilateral—a statement which must be borne in mind in considering the question of nephrectomy. Two of these perished stillborn, one lived six hours, one 30, and one 46 hours, while one died 20 days, and another between three and four months

after birth. In other cases where life was prolonged "we must assume," says Sir William Roberts, "that the impediment to the urinary flow was at first incomplete, though the malformation was congenital, and that its effects were not fully developed until a subsequent period, and then probably with extreme slowness."

It is unnecessary to describe here the well-known appearance of kidneys affected by this condition. Generally they present a mere fibrous skeleton of the gland with the pelvis and calyces enormously dilated, and the secreting structure to a great extent and sometimes entirely absorbed. The surface shows numerous rounded elevations bounded by fibrous septa, and corresponding to the lobules of which the foetal kidney is composed. The fluid which is contained in such a sac is of a low specific gravity, and contains little urea or uric acid.

As already indicated in the foregoing enumeration of causes, the effects may be immediate or remote. If the condition affects both kidneys, death usually occurs at a very early period. If, on the other hand, it be unilateral and due to permanent obstruction of the ureter there may be no symptoms, and life may be prolonged to its natural term. When, however, the cause is intermittent, as in many instances that have been given, a tumour is produced which requires to be differentiated from other similar swellings. In the absence of any history of severe crush or blow, it will not be confused with a perirenal hæmatoma or perinephritic abscess. Notably, it may need to be distinguished from ascites, especially if both kidneys are involved, which can, however, hardly ever be the case; and where the one kidney only is affected the permanent dulness on the affected side in all positions, and the uneven surface of the tumour as contrasted with the even surface of the abdomen, with the shifting of the fluid and the accompanying anasarca, will probably make the distinction an easy matter. From the rare cases of ovarian cysts in children the tumour would be distinguishable by the presence of the colon in front, and by the dulness in the lumbar region of the side affected. Hydatids of the kidney are very rare in children, and their presence could only be surmised by the detection of the hydatid fremitus and by the passage of cysts with the urine. One is described by Mr. Bruce Clarke as having been found in the kidney of a boy who died from rupture of the stomach, and one

was found *post mortem* in a child who died at the Hospital for Sick Children, Great Ormond Street. The presence of pus in the urine and the accompanying pyrexia would indicate the condition of pyonephrosis, whether engrafted upon the cystic condition or arising in consequence of a calculus in any part of the tract or due to tuberculous disease. The region of the kidney is occasionally the site of tumours of the character of cystic hygroma, and such a one is described by Sir T. Smith, and was exhibited by him at the Pathological Society of London. The tumour weighed 14 lbs., and was removed from a child 17 months old, whose weight was more than half made up by the disease. It was first noticed at the age of 3 months, when it appeared to be of the size of an orange. Although from the first the disease made very rapid progress, it was not accompanied by any special cachexia, and until by its size and weight the tumour interrupted the functions of the abdominal viscera, the child's health was unaffected. When this, however, took place the child rapidly emaciated, and died from inanition. After death the tumour was found to be behind the parietal layer of the peritoneum, which was tightly stretched over its anterior surface. It was covered by a distinct capsule, and had formed no connection either by adhesion or infiltration with surrounding parts. It originated in the substance of the left kidney, the remains of which, unaltered in structure, were found spread out in a thin layer over its posterior surface. The ureter was healthy, there was no affection of the lymphatic glands, and the remaining viscera were unaffected. On dissection, the tumour was found to contain numerous cysts embedded in a coarse fibrous or reticulated structure. The cysts were of various sizes; the larger ones contained others of smaller dimensions springing from their inner surface. On microscopic examination, the solid parts were found to be of a fibro-cellular structure, the cellular elements predominating over the fibrous. The cysts contained a clear serous fluid.

In the eighteenth volume of the 'Transactions of the Royal Medical and Chirurgical Society,' Mr. Cæsar Hawkins described a cyst which filled the entire right side of the abdomen in a boy, aged 6 years. In the walls of the cyst was a small third kidney which had no excretory duct. The cyst was punctured during life, and five pints of aqueous fluid, free from albumin and urinary salts, were found in it after death.

Although not arising in or directly connected with the kidney, other congenital cysts are found to occur in the neighbourhood which might be confused with those with which we are now concerned. Such are the various forms of mesenteric cysts described by Mr. Treves in his work on surgery, and others related by Mr. Moynihan,* one of which occurred in a girl, aged 6 years, and was multilocular; and two others are described in the 'Annals of Surgery,' June, 1897, one of which occurred in a child, aged 4 years, and another in a boy, aged 8 years, which attained enormous size. It was twice tapped, and finally removed, when it was found to be multilocular, and attached to the great omentum by its entire width below the margin of the transverse colon, within the folds of which the cyst had developed. Two interesting cases in which the cysts were removed have recently been related by Mr. Eve in a paper read before the Royal Medical and Chirurgical Society.

In a congenital hydronephrosis there is one sign which only occasionally is given, but which is definitely reliable as indicating the nature of these tumours, viz., the sudden subsidence of the swelling followed by an increase in the flow of urine. If the dilatation becomes sufficient to form a tumour, which it may do at any time between the third and eleventh year, or even later, the necessity for surgical interference will arise, partly as a means of diagnosing the exact nature of the swelling and partly to relieve the patient of the inconvenience and sometimes even of the pain and the effects of pressure upon the intestines which occasionally result. A trial may first be made of systematic rubbing, which was successful in the case of a girl, aged 8 years, under the care of Sir William Roberts, who suddenly passed a large quantity of urine, when the swelling subsided and did not return. The same treatment was temporarily successful in a child, aged 3 months, under the care of Sir William Broadbent, and in a third case, under the care of Mr. Thurnam, in a boy, aged 4 months. But where this treatment is not available, either on account of the pain caused or the risk of rupturing the cyst, the fluid must be withdrawn by the aspirator or trocar. In the absence of any very distinctly fluctuating area, Mr. Morris directs that in the case of the left kidney the puncture should be made just anterior to the last intercostal space, whilst on the right

* 'Annals of Surgery,' July, 1897.

side, to avoid all risk of injuring the liver, it should be halfway between the last rib and the crest of the ilium, between 2 inches and $2\frac{1}{2}$ inches behind the anterior superior spine of the ilium.

The fluid thus released often amounts to a very large quantity, and is of a brownish colour and contains urates and urea. As a rule it reaccumulates very rapidly, and fresh tapplings are required. The most notable instance of recovery by this means is in the case related by Dr. Hillier, of a boy, aged 4 years, who was repeatedly tapped, and after one of the tapplings a quantity of fluid was passed from the bladder exactly similar to that from the cyst, a temporary communication thus obviously being established between the cyst and the bladder. This continued to occur. It was presumed that a congenital malformation of the right ureter existed, which rendered it liable to occlusion, but admitted, under some circumstances, of the passage of fluid. The boy died four years later from cerebral symptoms, and the right kidney was found to be converted into an enormous cyst. The right ureter was abnormally constricted, especially at its vesical end, so that fluid did not escape into the bladder until a fine probe had been passed.

Although this proceeding is occasionally successful, and the insertion and retention of a drainage tube has been followed by temporary relief, the operation that is most satisfactory is nephrotomy, followed by tapping of the cyst, and attachment of the margins of the incision in the tumour to the edges of the wound in the loin. Through the indiarubber drainage tube which is inserted all discharges can readily pass, and be caught in a suitable appliance. Mr. Newman quotes four cases in children under 12 years of age, all of which were successful. In three the lumbar incision was used, and in one the cyst was reached from the abdominal surface. Mr. Symonds and Dr. Tuckwell relate* the case of a boy, aged 11 years, with a large hydro-nephrosis. Nothing had been noticed until fifteen months before admission. The swelling was aspirated, and from three to four pints of turbid dark-brown fluid, containing altered blood, albumin, and urea, were withdrawn. The cyst rapidly refilled, and was incised, and similar fluid evacuated. The opening became obstructed, and the sac became larger than ever. A fresh tube was inserted, and drainage continued for six months,

* 'The Lancet,' July 29th, 1882, p. 141.

when all healed. In this case normal urine showed a healthy state of the opposite kidney.

Should the sac suppurate and the discharge become a source of exhaustion, and should there be evidence that the renal tissue is incapable of performing its function, lumbar nephrectomy may be called for. Mr. Newman's tables give eight cases in children under 12 years of age where the kidney was removed for hydronephrosis; six recovered and two died. In four of the cases the abdominal incision was resorted to, in the other four the lumbar incision, one death occurring in the case of each. To those may be added a case of a girl, aged 13 years, from whom a large hydronephrotic kidney was successfully removed by my colleague, Mr. Owen.* The abdomen was opened in the middle line, and the tumour consisted of one large cyst about the size of a foetal head, occupying the position of the pelvis; the kidney tissue was stretched, and involving the upper infundibula was another dilatation which opened freely into the larger cavity. A considerable amount of healthy renal tissue remained at the lower part and presented congenital lobulation. The patient made an excellent recovery.

The possibility of involvement of the opposite kidney must always be borne in mind in operating upon these cases. Only recently a child, who had for some months been in the medical wards of the Hospital for Sick Children at Great Ormond Street, suffering from symptoms of intestinal obstruction, was transferred to the surgeons on account of a tumour which developed on the right side of the abdomen. The urine had for some time been purulent. The child was aged 4 years, and was otherwise well formed. Mr. Pitts opened the abdomen by Langenbuch's incision, and felt what he took to be a healthy kidney on the left side. The tumour, which proved to be an intensely dilated kidney with most of the secreting structure destroyed, was then removed. No urine was subsequently passed, and the child died at the end of three days. At the necropsy it was found that the left kidney was almost non-existent and quite incapable of function. A ureter of the natural size and patent opened into the bladder at the normal site, and the suprarenal capsule was normal in size and position. The right ureter was greatly dilated and its orifice was exceedingly small.

* 'The Lancet,' December 4th, 1897, p. 1453.

CONGENITAL CYSTIC KIDNEY.

In the Hunterian and a few other London museums are to be found specimens of kidneys taken from foetuses or newly-born children where the whole gland is converted into a congeries of cysts. Quite recently Dr. Still has described a specimen which was removed from the body of a girl, aged 3 weeks. The child was born prematurely at the eighth month. Both kidneys were affected, and together weighed 15 ounces. The capsule stripped easily, and the surface presented a translucent appearance, which was seen to be due to innumerable closely packed cysts, none of which projected on the surface. On section the whole kidney had a honeycomb appearance due to numerous small, more or less tubular, cavities separated from one another only by fine septa; these cavities seem to be more developed in the cortex than in the pyramids. The pelves and ureters were normal. The liver in this case, as in many others that have been described, also showed on section numerous small cavities. This condition is bilateral, and is ascribed by Virchow to intra-uterine nephritis, or to impaction of the straight tubules with uric acid, both of which lead to atrophy of the papillæ and obliteration of the pelvis of the kidney. Koster considers it to be due to a malformation of the lower urinary tract. Mr. Shattock, regarding this condition from the developmental point of view, argues that it results from a want of differentiation of the metanephric blastema, out of which the permanent kidney is developed, from that of the mesonephron or Wolffian body. The proper tissue of the kidney grows into that of the Wolffian body, while the remnants of the latter become the seats of the cysts scattered through the proper renal tissue. The enlargement of the cysts may, by irritative tension upon the intertubular tissue, produce an excess of this tissue and cause the origin of the urinary retention cysts, and the presence of these cysts would certainly produce secondary pressure on the proper renal tubules, and thus lead to the formation of true renal retention cysts. Dr. Still, whose interesting paper will be found in the next volume of the 'Transactions of the Pathological Society of London,' adopts this view, and putting aside the theory of intra-uterine inflammation, believes that the same cystic condition which is found in adults from 50 to

70 years of age, is due to the presence of glomeruli and tubules, which for a long period retain a healthy condition. These states are rare, and are of more interest to the pathologist than the surgeon.

INJURY.

Children, and particularly boys, are liable to injuries from crushes, or from the passage of wheels over the abdomen which produce lesions of the kidney or ureter or the tissues which envelop them. In the latter case there may be nothing but a circumscribed collection of effused blood, which may be absorbed or may become surrounded by lymph in which it is encapsuled, and from changes of the constituents a cyst is formed, which is variously styled perirenal or paranephric. Or, again, the effusion may break down and, forming an abscess, give rise to all the constitutional effects of suppuration, and ultimately point in the ilio-costal region. But this perirenal extravasation is often followed, at a period of from two weeks to two months, by a swelling containing more or less clear fluid with some of the constituents of the urine. These have been shown by Mr. Barker to vary inversely to the amount of pressure within the sac which forms around the extravasation. These effusions are liable to suppurate or to rupture into the peritoneum. The most notable instance of the last occurrence is related by Mr. Taylor, where, as a result of injury in a girl, aged 15 years, an accumulation formed which burst into the peritoneum, giving rise to symptoms of profound shock. An opening was made in the median line, the peritoneum was sponged out, and the wall of the cyst stitched to the edges of the incision. This opening closed, and a second had to be made on the outer side of the rectus. The patient recovered, and a glass tube was worn in the fistula, through which the urine passed.

Previously to this, Mr. Stanley had described the case of a boy, aged 9 years, in whom a circumscribed swelling appeared six weeks after injury. This was punctured on six different occasions, and the boy was discharged, though a swelling remained. Several other cases are recorded. One where a boy, aged 7 years, who had been knocked down by a van 11 months previously, came a second time under the care of Mr. Godlee, who had attended him soon after the accident, but had discharged him as convalescent.

There existed a large tumour occupying the whole of the epigastric region. This was cut down upon, and 43 ounces of turbid, whitish-yellow fluid were drawn off; the margins of the opening into the cyst were stitched to the edges of the abdominal wound, and a drainage tube inserted. In a case related by Mr. J. Marshall, a girl, aged 13 years, was run over across the loins, and apparently recovered, but nine months later was found to have a fluctuating tumour over the left side of the abdomen. This was first aspirated, but afterwards drained antiseptically with a successful result.

In Mr. Barker's case, again, the child, aged 3 years and 8 months, was run over in August, and passed some urine containing blood-clots. She did well at first, but was readmitted three weeks after the accident with a fluctuating swelling of the character of a hydronephrosis, and there was no evidence that any urine from the affected side was entering the bladder. As the constitutional symptoms became serious, the tumour was first aspirated, then drained, and finally removed on November 19th, the patient making a good recovery.

Mr. Owen ('Lancet,' December, 1897) relates the case of a boy, aged 7 years, who was kicked on the left side of the abdomen by a horse. There was at first pain, sickness, and hæmaturia, but at the end of nine days he was able to get about. Shortly afterwards a tumour developed, which was aspirated at the end of the third week after the accident. This reappeared after three days. It was then cut down upon, and it was found that the capsule had been completely torn across, and the upper four-fifths of the kidney separated from the lower fifth. A drainage tube was inserted, and complete recovery followed.

Lastly, in Mr. Croft's case, a boy, aged 12 years, met with a fall which injured his left side and loin. There followed pain and hæmaturia. He was admitted to hospital, but discharged as convalescent. On the forty-ninth day after the accident he was readmitted with a swelling in the left lumbar and hypochondriac regions, but without any blood in the urine. Seventy-nine ounces of urine-coloured fluid were withdrawn by the aspirator; altogether the tapping was performed eight times, and after the last occasion no swelling recurred.

From this brief relation of the more important of several recorded cases the course and symptoms of this accident can be gathered. After the first symptoms of shock, followed generally

by vomiting, there is more or less hæmaturia, lasting for two or three days. If the ureter becomes blocked with clots, there is considerable pain, which is referred to the loins and runs down to the testes. These symptoms may be induced by a simple bruise of the kidney, but if there be rupture of the ureter or pelvis, or laceration of the gland structure, in the course of time a tumour will appear which may attain a very large size, and form what has been termed a spurious hydronephrosis. In a case under the care of Mr. Pitts, of a girl, aged 9 years, who had been run over by a hansom cab six weeks previously, 41 ounces of clear fluid were removed by tapping, and the swelling was reduced by massage.

Unless it becomes necessary to cut down upon the kidney or to remove it, the actual lesion can only be guessed. The ureter may be blocked with clots, which when passed will allow the passage of urine, and the patient shows no further sign of the injury. Or the amount of blood may be such as to excite an acute cystitis, as in the case that is described by Dr. Rawdon of a boy, aged 12 years, who injured the right kidney by a fall. The hæmaturia was followed by cystitis, and to avoid further hæmorrhage the kidney was removed by a lumbar incision, and was found to be torn completely across. Four days later lateral cystotomy was performed, and a free drain established. The patient died on the fortieth day from pyelitis and circumscribed suppuration of the left kidney.

The treatment of these injuries, therefore, is in the first instance to check further hæmorrhage and to subdue pain, then to watch carefully for any changes indicating suppuration in the effusion or the formation of swelling by the secretion of the kidney. Aspiration may be tried and supplemented by gentle massage, but if the swelling increase or if there be any signs of suppuration a lumbar incision must be made and the state of the kidney investigated. If this be ruptured it must be removed, but if not, a drainage tube must be inserted and the cavity washed out with antiseptic solution until it closes. In removal of the kidney under these circumstances the surgeon may count upon the healthy state of the opposite organ, unless there is reason to fear that it also has been damaged by the accident, although one case is recorded where rupture took place of a single hypertrophied kidney.

Apart from traumatic causes perinephritis and perirenal abscess are very rare in children. The *post-mortem* books of the Hospital for Sick Children, Great Ormond Street, record but very few instances, and the majority of these are due to pyæmia. Calculus in the kidney, though producing pyelitis, seldom gives rise to inflammation in the surrounding tissue. Dr. Gibney reports 28 cases of primary perinephritis in children, the majority occurring between the ages of 3 and 6 years. Most of the cases had been diagnosed as disease of the hip-joint or of the spine. Resolution followed in 12, and 16 ended in suppuration. Personally I have met with few, but one case that was sent to me was that of a boy, aged 8 years, who presented many of the features of hip-joint disease. A large abscess soon presented itself in the iliac region, which was not due to spinal caries and was not apparently perityphlitic. There was a history of a kick upon the loin some time previously. A large abscess was opened and drained through the lumbar region. All the hip symptoms passed away and he is now strong and healthy. Exploration showed the abscess to surround the kidney.

SYMPTOMATOLOGY OF HÆMATURIA.

Before passing to other diseases of the kidney it may be well to review the causes of the presence of blood in the urine. Hæmaturia may indicate a local or a general disease and the detection of its origin must always be of primary importance. It may arise from any part of the tract and may be so minute as to escape all but the most careful search by the microscope or by tests. It may be constant and slight or profuse and intermittent. Apart from poisoning by such drugs as chlorate of potash, cantharides, turpentine, carbolic acid, and rhubarb, small quantities of blood are found in the urine of young infants, as the result of irritation of the tissue of the kidney by uric acid and other crystals; when more abundant it occurs in connection with the other evidences of scurvy rickets, of which it is sometimes the earliest symptom. In purpura the hæmorrhage from the kidney is often profuse, with intervals of intermittence and in hæmophilia it is also common. Dr. J. Abercrombie has recorded a case of Raynaud's disease in which a little boy passed bloody urine day after day for six weeks together in the colder seasons, which ceased when the child was

kept warm before the fire. In vol. xv of the 'Transactions' of this Society will be found a very interesting account of a case of Raynaud's disease with paroxysmal hæmoglobinuria, by Dr. Haig, in which he says that his previous researches led him to believe that both the Raynaud's disease and the hæmoglobinuria in this case (that of a girl, aged 6 years) were due to an excess of uric acid in the blood (uricacidæmia), and this theory affords a most simple explanation of their evident connection. Blood in smaller quantities occurs in Bright's disease, in hæmorrhagic measles, in scarlet fever, diphtheria, and small-pox. What has been named Winckel's disease, in which cyanosis, jaundice, and hæmoglobinuria attack new-born children on or about the fourth day and cause death in 48 hours, has not been observed in this country; but paroxysmal hæmaturia or hæmoglobinuria, where no blood corpuscles can be detected, but the urine is nevertheless stained with blood pigment, has been fairly often detected. Dr. Herringham has described the cases of two sisters, aged $3\frac{1}{2}$ years and $4\frac{1}{2}$ years, who were hereditarily syphilitic, and Dr. Voelcker, who has noted several others, finds a syphilitic taint in all of them. I have, however, seen a typical case in private where no such suspicion could have existed. But it is as a symptom of local affections that hæmaturia is of diagnostic value to the surgeon, and of these I shall have to speak later. As a general rule hæmorrhage from the kidney is more profuse than from the bladder, and is seldom accompanied by pain, unless it gives rise to the formation of clots in the ureter, when the pain may be referred to the loin, the testes, or the thigh, but ceases as soon as the clot is washed onwards to the bladder. The origin of the hæmorrhage from the kidney is generally confirmed by the presence of casts and epithelium. In examining cases of supposed hæmaturia it is well to keep one's eyes open to the possibility of deception, as instanced by the case narrated in the 'Transactions of the Clinical Society of London,' vol. xxiv, by my late colleague, Mr. Leopold Hudson, of a boy, aged 11 years, who gave a history of suffering from the usual symptoms of stone, and brought a specimen of his urine with a red stain which was afterwards found to have been produced by steeping in his urine a piece of rag stained with Turkey red dye.

TUBERCULOSIS OF THE KIDNEY.

The acute miliary form of tuberculosis which affects the kidney is only a local manifestation of a general disease, and is very commonly in children associated with tuberculous phthisis or meningitis. Dr. Dickinson found that in nearly a sixth of all children dying thus affected tubercle was present in the kidneys, and states that renal tubercle is nearly three times more frequent under than over the age of 12 years. Of 28 children under 12 years of age both kidneys were affected in 19, one only in nine, and the sexes were attacked impartially. Out of 24 children dying under the age of 12 years with the kidneys involved, 13 died under 5 years of age and 11 between the ages of 5 and 12 years. This corresponds with the estimate of Rilliet and Barthez, who found that in 315 tuberculous children tubercle of the kidney was present in 49, or 15 per cent., and that therefore the kidney was three times more liable to tuberculous deposits in children than in adults. The invasion of this organ is seldom marked by any distinct symptoms, and the affection of the kidney is disguised by the more evident signs of disease which are manifested in the lungs or the brain. Such conditions, therefore, admit of no surgical treatment. When the disease originates in the urinary organs the infection may be conveyed by three sources. The principal and commonest is by the blood; secondly, it may ascend by the ureters or lymphatics from the bladder; or, thirdly, it may extend from the surroundings of the gland. I shall have to speak of the second of these sources when dealing with tuberculosis of the bladder.

Chronic localised tuberculosis or strumous disease of the kidney is by no means frequent in children. Out of 15 cases collected by Mr. Morris there was not one instance in a child younger than 11 years. The pathological history of the affection is the same as that of the disease in other organs. The bacilli conveyed in the blood-stream to the glomeruli for elimination must of necessity cause great risk of infection, and consequently the principal seats of the early deposits are the apices of the papillæ, the calyces, or the pelvis of the gland. First are deposited the miliary nodules and these coalesce to form caseous masses. As these break down fresh nodules are deposited in other parts, and the caseous

necrosis that ensues lays bare an ulcerating surface in the pelvis, whilst in the periphery they form irregular cavities. As more and more renal substance becomes involved these cavities coalesce and the secreting structure may be entirely destroyed. Generally the pelvis of the kidney and the ureter become thickened, the mucous membrane ulcerates, and its lumen is occluded. If the ureter remains pervious the *débris* may be washed away and in its course will almost surely involve the parts below, and thence the disease may ascend to the opposite organ. If, however, the ureter becomes blocked the whole organ may be converted into a large abscess cavity or series of cavities with caseous *débris*—tuberculous pyonephrosis. Sometimes the obliteration of the ureter causes the whole organ to be converted into a shrunken, putty-like mass, or large abscesses may result by reason of the access of pyogenic organisms.

In view of the rarity of this affection in childhood it might seem hardly worth while to linger over its symptoms or its diagnostic difficulties, yet there has been a sufficient number of cases in which operation has been satisfactory to encourage the hope that a larger number of successes might follow an earlier recognition of the affection. This is, however, a matter of peculiar difficulty at all ages, and especially in young patients, since the symptoms in the earlier stages are little marked and local signs are absent, whilst, on the other hand, when evidence is more pronounced, when the urine becomes constantly purulent, and vesical irritation is a marked characteristic, the disease has so far involved other portions of the tract that only palliative treatment can relieve.

It becomes, then, of the utmost importance to examine closely all signs which may indicate an early invasion of the gland. The symptom so common to many other affections, *thamuria*, or frequency of micturition, is here also that which directs attention to the possibility of some morbid condition in the kidney, and when all other causes can be eliminated, the region of the kidneys should be carefully palpated and the question of tenderness investigated, and any history of pain in the loin or in the testes examined. Any increase of size in either gland can best be appreciated with the aid of an anæsthetic. The urine offers few indications in the earlier stages except that its quantity is often increased and the specific gravity is frequently low. At a later period it becomes

purulent, and, as distinguished from calculous pyelitis, where the amount of pus is intermittent, in scrofulous disease it is always continuous unless the ureter becomes blocked. Even with large quantities of pus the urine in the early stages is generally acid. Examination for the tubercle bacillus should never be omitted and must be most carefully carried out, but no reliance can be placed upon its absence. I have frequently been disappointed in searching for it, even in marked cases of tuberculosis of the bladder and other parts of the tract. Blood is only to be found at intervals and seldom in large amount. It is, especially in the earlier periods, a matter of the utmost difficulty to differentiate between the pyelitis of tubercle and that of calculus, but in the latter the inflammation of the pelvis does not spread to the ureter or bladder, and there is, therefore, no dysuria such as forms a very distressing symptom in the later stages of the former. Whenever, then, these early stages have been observed the constitutional symptoms must be carefully watched for, the evening pyrexia, the night sweats, pallor, and emaciation which ordinarily accompany the invasion of tubercle in other parts. Even if catheterisation of the ureters were possible in the case of children the plan is not advisable for fear of spreading disease in the healthy ureter, and the use of the endoscope is prohibited except in a few cases, so that there is no aid from such sources for detecting whether pus comes from one or both ureters.

If, then, from such evidences there arises a strong suspicion that one kidney is affected by scrofulous disease, the question has to be decided whether surgical interference is justified. Speaking of the disease generally, Dr. Dickinson states that both kidneys are affected as often as one alone, and only one case in seven occurs in which the disease does not affect other organs. Aldibert has collected 13 cases of children in which nephrectomy was performed. Of these nine recovered and four died, two of the deaths not being traceable to the operation or to the original disease. No recurrence had taken place in one at the end of eight years, and none in another after three. Professor Gross's tables give 20 instances of removal of the kidney at all ages for scrofulous disease, 12 recovered and eight, or 40 per cent., died. Tubercle was limited to one kidney in only 65 per cent. In eight cases of preliminary nephrotomy relief was not afforded, so that this proceeding is not recommended.

Mr. Morris, on the contrary, recommends that nephrotomy should first be tried in cases that are not advanced, in the hope that it may check progress by opening and draining the abscess cavity. Nephrectomy may be performed later if strength improves or if lardaceous disease threatens. He adds: "It is in the scrofulous kidney especially that we so much need the means of ascertaining the working capacity of the other kidney, and it is in these cases also that the difficulty of doing so is almost insuperable." Professor Gross, from this point of view, recommends the operation in an early stage by means of a ventral incision by which both kidneys can be examined, and of which he states the mortality to be 14·28 per cent., against 53·84 per cent. by the lumbar method. Mr. Newman's tables, published in 1888, record two cases of nephrotomy for this condition in childhood, both of which ultimately recovered, though one (that of Mr. Morratt Baker) subsequently had the kidney successfully removed, and five cases of nephrectomy, four of which recovered. To these may be added a case by Mr. Wright, in which at intervals nephrotomy, cystotomy, and nephrectomy were performed, the child dying with much ulceration of the bladder, and a case by Mr. Eve, where in a child, aged 3 years and 9 months, nephrotomy was first performed, and 17 days later the kidney was removed through a prolonged incision. The child recovered, and was in perfect health seven months later.

In the light of these results it would seem that where the abscess is large, nephrotomy and drainage should first be tried, and later nephrectomy, but where suspicion of an early state of disease is tolerably certain, the two kidneys should be examined by means of a ventral incision, and if one be found healthy and the other extensively diseased, the one affected should be at once removed.

LECTURE II.

TUMOURS OF THE KIDNEY.

MR. PRESIDENT AND GENTLEMEN,—Amongst the *post-mortem* records of the Hospital for Sick Children, Great Ormond Street, already quoted, there occur eight cases of primary sarcoma of the kidney. Three cases affected both glands, invading them from without, and have been described by Dr. Abercrombie.* Five other cases are mentioned as being retro-peritoneal in origin but directly or indirectly involving the kidney. In two instances the gland was secondarily affected with sarcoma which originated in other parts and in one by lymphadenoma. All the cases of primary sarcoma occurred in children under 4 years of age. One instance is recorded in which sarcoma commenced in the suprarenal and invaded the kidney. This happened in a boy, aged 8 years and 4 months. These observations concur with those of other writers. Dr. Windle† states that 33 out of 40 occurred before the tenth year, and of these 33, 26 were before the fifth year. Dr. Dickinson's tables show six cases under 5 years of age, none between 6 and 20 years. Sir William Roberts mentions 25 cases under the age of 10 years; indeed, all except three under 5 years. Dr. Senator's statistics of 96 cases show 58 males and 38 females. In children under 10 years, 50 per cent. occurred during the first two years and 85 per cent. during the first five years. In Mr. Newman's tables 48 per cent. were under 10 years of age. But by far the most complete analysis of this affection has been recently published by Dr. George Walker, of Baltimore, who has collected 142 cases. He finds that as regards sex they are fairly equally distributed, and that the greater number occurred in children under 4 years of age. Dr. Starr out of 54 cases found nine under 1 year, 17 between the ages of 1 and 3 years, 18 between 3 and 5 years, six between 5 and 8 years, and four between 8 and 12 years, the sexes again being fairly equally affected. In a valuable statistical paper by Leibert, quoted by

* 'Transactions of the Pathological Society,' vol. xxxi.

† 'Journal of Anatomy and Physiology,' vol. xviii.

Dr. Money,* 60 cases were collated. Forty of the number died under the age of 5 years, and 20 under that of 2 years. The sexes again were equally affected. Similar evidence is given by Mr. Taylor and other writers, and it would seem established that these tumours are most frequent during the first five years of life, and are fairly equally distributed between the sexes, and perhaps occur rather more often on the left side than on the right. The size to which they may attain is enormous. In the Middlesex Hospital Museum is a specimen which was removed from the body of a boy, aged 8 years, which weighed 31 lbs., and one was reported by Sir Spencer Wells as having weighed from 16 lbs. to 17 lbs. The mean duration of the disease, according to Sir William Roberts, is, in children, nearly seven months, the minimum 10 weeks, and the maximum over a year. The course of the disease appears to be longer the older the child.

Although some of the earlier cases are described as encephaloid it may be taken that the greater majority are sarcomata, though Birch-Hirschfeld and Mr. Sutton found adenomatous tissue in a large number, and the conclusions concerning them, which are summarised by Mr. Paul in an admirable paper,† may be accepted in full:—(1) That these tumours show themselves generally during the first few years of life, and are probably invariably of congenital origin; (2) they are primarily extrarenal, though usually extracapsular, and distend and surround the kidney in preference to invading it; (3) they rarely cause marked urinary symptoms or much pain, death ensues from exhaustion or from pressure effects; (4) occasionally they give rise to metastatic growths, some infiltrate the kidney, all recur after removal; and (5) they frequently contain striped muscular fibre and embryonic renal tissue. Such growths he classes under one general title as congenital renal tumours closely allied to dermoids in origin. Considering the almost invariable malignancy of these tumours, probably such a clinical title is as good as any that can be found, and no great advantage is to be gained by naming them according to the prevailing cell elements, whether they be round or spindle shaped. The last variety, in which striated muscle appears, deserves, however, some special identification. Muscle fibres are found in connection with tumours of other organs, such

* 'Transactions of the Medical Society,' vol x.

† 'Liverpool Medical and Chirurgical Journal,' January, 1894.

as the testis, but these rhabdomyomata of the kidney are of particular interest and probably find a true explanation of their origin in the views of Cohnheim, who, recalling the close relation of the first rudiments of the urogenital organs to the proto-vertebræ, suggests that by a faulty segmentation of these parts some of the germinal muscle cells may be mixed from the commencement with the cells constituting the rudiment of the kidneys, and that these cells afterwards develop into a pathological new growth. All the cases described have occurred in children under 18 months of age, and in most of them both organs were affected. Mr. Eve's description of the specimen shown by him before the Pathological Society will serve for all. A large nodulated tumour with distinct capsule, the kidney tissue normal, the consistence uniform, yellowish white resembling myo-fibroma of the uterus. Microscopically, striped muscle arranged in fasciculi, generally parallel, round and spindle cells in nodules among the muscular tissue. In a specimen shown by Dr. Dawson Williams from a child, aged 13 months, the right kidney was involved, and the tumour weighed 1 lb. 13½ ounces, or one-sixth of the weight of the body.

The tumours of the kidney in childhood are, therefore, almost without exception malignant, and the great majority are of the nature of sarcomata, though a few bear affinities to the adenomata, and, in rare instances, show pigmentation. They are by far the most frequent of all malignant tumours occurring in the abdomen in childhood, and originate either from the cortex and invade the gland, or in the perirenal tissue. Very rarely they commence in the adrenals, sometimes surrounding, sometimes infiltrating, the whole of the kidney. By pressure the tumour may cause hydronephrosis, and adhesions may be found to other structures. The pressure effects may cause ascites or œdema of the lower extremities. They are frequently bilateral. Neither traumatism nor antecedent disease has much to do with their origin. Occurring for the most part in very early life, and confined at first to one side of the abdomen, they present a smooth, rounded outline as distinguished from the sharp edge of an enlarged liver or the notched surface of an hypertrophied spleen. On bimanual examination they are found to be movable, but attached to the neighbourhood of the lumbar spine. They grow forwards and do not bulge in the lumbar region. Though dull on percussion,

except where crossed by intestine, they are often so soft as to give an obscure sense of fluctuation, and have thus been mistaken for ovarian cysts. They are invariably crossed by a portion of the colon, and in an early stage are influenced by the movements of respiration. There is generally a space into which the fingers can be pressed between the upper margin of the renal growth and the ribs. So rapid is usually the advance of these neoplasms that they present only two symptoms in their earliest onset, viz., that of a large rounded tumour commencing in the loin, which most often is the first indication, and hæmaturia. In 12 per cent. this latter is said to be the primary symptom. Both might well in the earliest onset be mistaken as due to hydronephrosis, or the presence of calculi in the pelvis of the kidney. But the nature of the swelling is soon evidenced by the rapidity of its increase, and the hæmaturia differs from that resulting from calculous or scrofulous pyelitis in its abundance and its intermittence, the urine in the intervals being clear. It may be so abundant as to form clots in the bladder or ureter, when pain will occur as an additional symptom. If hæmaturia occur without an assignable cause, the patient should be strictly watched for several weeks. By this means Israel found a growth very early, and removed it successfully.* Cachexia does not appear until late, and then the wasting is rapid and the effects of pressure become evident in dyspnœa, vomiting, and indigestion.

The conditions are few which give rise to any difficulty of distinction between these rapidly growing tumours of the kidney and those of other parts. Malignant disease of the suprarenals is rare, and its results are similar to those in the case of the kidney, which is generally surrounded. The origin of such growths may be indicated by pigmentation of the skin and an abnormal growth of hair about the pubes and other parts of the body. A specimen of such a tumour is preserved in the museum of St. George's Hospital, and described in the 'Transactions of the Pathological Society,' vol. xvi, and also by Dr. Dickinson:—
“ A girl, 3 years of age, presented in the left hypochondriac region a hard, round, slightly movable mass, of which the whole circumference could be traced. The skin was generally hyperæmic; it was gipsy coloured, though not bronzed, and was covered with a remarkable growth of dark hair. The tumour proved to be

* Langenbeck's 'Archiv,' Band xlvii, 1894.

a globular mass of encephaloid 6 inches in diameter, which had replaced the left suprarenal capsule. This lay immediately beneath the abdominal wall uncovered by bowel of any kind. It had pushed itself out of its proper place in regard to the kidney, and lay along its inner edge close to the hilum, which, with the tumour upon it, was turned forward, the growth extending without interruption between the concave margin of the kidney and the abdominal front; thus the tumour had assumed the position, but not the relations, of a renal enlargement." The only distinction in this case was that no bowel lay in front of the swelling. Enlarged lymphatic glands form a movable swelling which may closely resemble a renal tumour. At a meeting of this Society in 1885 I exhibited a patient, aged 10 years, with a hard, firm mass lying in the abdomen to the left and a little below the umbilicus. It had apparently some pedunculated attachment posteriorly, but it could be moved, especially towards the left flank. There was no pain, and no abnormal conditions could be detected in the urine. Many opinions were offered as to its nature, but all doubts were solved when nine years later the youth, who had declined all suggestions of operative interference when first seen, came and requested me to remove the tumour, which had altered little in the interval. This was done, and the young man afterwards entered the army. The swelling proved to be a mass of calcareous mesenteric glands.

Clearly the treatment of these cases resolves itself into the question of whether operation is justifiable or no. This has been examined by many able critics. Professor Gross in an admirable paper forbids the operation altogether. He states that of 16 patients operated on for sarcoma between the ages of 16 months and 7 years, seven survived and nine died, a mortality of 56·25 per cent.; five died from recurrence in a few months, and of two others there is no further history. In the 'Archives of Pediatrics,' February, 1896, Dr. Emily Lewi has tabulated 60 cases of nephrectomy for renal sarcoma in children. The operation mortality was $28\frac{1}{2}$ per cent. But recurrence took place in nearly all the cases and at the time of writing only three cases had passed the three years' limit. Mr. Newman gives 19 cases in patients under 6 years of age, 13 died and 6 recovered from the operation, but the after-history is not given. Dr. Aldibert collected the results of 45 cases; 20 deaths occurred soon after

operation, two-thirds of them from shock. In 11 cases death was caused by recurrence within nine months. Mr. Sutton has tabulated 21 cases of operation in children under 6 years. Most of these are identical with those of Mr. Newman. There were 9 recoveries and 12 deaths; of those which survived the operation all were dead within a year. From 74 cases collected by Dr. George Walker he calculates that the ultimate mortality lies between 74·32 per cent. and 93·22 per cent. He mentions in his list of successful operations two remarkable cases. The first is by Israel, who removed an alveolar sarcoma from a boy, aged 14 years. The patient was well and strong five years later. Schmidt operated for sarcoma on a girl, aged 6 months, who was living and well four years later. Besides these are two cases by Dr. Abbé and one by Mr. Malcolm. The first of Dr. Abbé's patients was a child, aged 13 months, where the tumour weighed 7 lbs. and the patient, after operation, only 15 lbs. The recovery was uninterrupted, and three years after the operation the child was in perfect health. The second case was in a child, aged 2 years, and the tumour weighed $2\frac{1}{4}$ lbs. This patient was in perfect health three years and nine months subsequently. The first case is the more remarkable in that the tumour is described as a rhabdomyo-sarcoma, and that the kidney was ligated and a healthy portion of the gland was left. Mr. Malcolm's patient was a girl just under 2 years of age, and the right kidney was removed through an incision in the right linea semilunaris. The tumour, which is preserved in the Museum of the Royal College of Surgeons of England, was examined by Mr. Targett, who pronounced it as being composed of tubules lined by columnar epithelium and collections of shorter epithelial cells arranged as if to form the lining membrane of a tube, but showing no lumen, a malignant adenoma. Here was found nothing resembling striped muscle cells nor any sarcomatous tissue. These cases are therefore not identical, nor do they differ greatly from those tumours which had rapidly recurred after removal. Mr. Malcolm suggests that the success of his case may have been due to a free excision of the parts. The glands removed with the surrounding fat showed, however, no secondary deposit.

Mr. Thornton points out that renal sarcoma in children is more rapid, and more quickly involves the surrounding tissues, speedily recurs extensively, and leads to an amount of suffering altogether

beyond what is seen when the disease is allowed to run its natural course in the kidney. Mr. Butlin altogether opposes the operation in the case of children. Quoting the last three of the successful cases just mentioned, Mr. Jacobson considers the opinion expressed by Mr. Butlin and Mr. Thornton as too pessimistic, and suggests that as some growths are less malignant than others, the operation may occasionally be justifiable. The older the patient and the smaller the tumour the greater is the probability of success. In the cases which have come before me I have only once felt justified in attempting to remove such a tumour, though I have more than once opened the abdomen in order to see the conditions and surroundings, and this I consider a justifiable proceeding, since it does nothing to hasten the patient's inevitable end, and may give some hope of being able to proceed to the removal of the tumour. As to the choice of proceeding in the event of nephrectomy being decided upon, the lumbar operation gives a smaller mortality than the abdominal, but with no great difference. On the other hand, the latter gives more room for the removal of a large tumour, and for dealing with bleeding vessels. Dr. Abbé in both his cases used a long transverse incision, placing the patient in Trendelenburg's position. Mr. Malcolm opened the abdomen in the course of the linea semilunaris, and this has been more favoured by other operators.

RENAL AND VESICAL CALCULI.

The origin, development, and progress of calculi in early life have been investigated and described by so many excellent observers that I should be guilty of needless repetition were I to say much upon this subject. That a calculus may actually be formed during intra-uterine life is shown by the fact that one was found by Langenbeck in the kidney of a foetus of 6 months, and Jacobi found six cases of congenital renal calculus in 40 necropsies; but it is a matter of very frequent observation to find deposits of crystals in the cortical portions of the gland in new-born infants, which in the ordinary process are washed away by the fluid components of the mother's milk. These so-called infarcts consist of amorphous urate of ammonium mixed with crystals of uric acid and are found occupying the straight tubes of the pyramids. In young infants they are due to the increased metamorphoses of

tissue elements which must take place after birth in consequence of the newly inaugurated processes of digestion, respiration, and generation of heat (Dr. E. Smith). Ebstein believes that these uric acid infarcts of newly born children form the first stage of calculous production, and that the large quantity of uric acid present in foetal and early life explains the frequency of calculi of this substance. The abnormal elimination of uric acid leads to degeneration of epithelium which forms the animal basis of the calculus, which may remain in the tubules, or pass into the pelvis and become enlarged by successive additions. The amount of uric acid in the urine of the new-born child has been proved to be greater than at any subsequent period of life. The proportion of uric acid to urea is said to be as much as 1 in 14, and consequently the crystals of uric acid and amorphous and crystalline urates are frequently found in abundance, and it is a matter of constant observation that these by their irritation may cause an excessive amount of disturbance even in very young infants, as evidenced by pain, anuria, and occasionally even by the presence of blood. But it is to the later manifestations of lithuria, or the uric acid diathesis, that attention is more seriously called, and these are a direct result of the injudicious feeding of the infant. Independently of the actual development of calculus all the symptoms which indicate its presence in some part of the tract may be caused by an excessive amount of uric acid salts, and this excessive elimination, when continuous, is always evidence of a serious disturbance of nutrition. The urine is frequently of low specific gravity, often 1,006, pale as water, and containing very little urea. The explanation of the deposit lies in the small proportion in which the alkaline phosphates, the presumed solvent of uric acid, exist in the urine of infants. "In children," said Sir B. Brodie, "the deposition of lithic acid sand by the urine will not infrequently produce not only pains in the glans but bloody urine and all the other symptoms of stone in the bladder." Besides uric acid, oxalate of lime concretions are not infrequent as well as small calculi of the urates of ammonia and soda. The symptoms produced by these conditions are to be observed in children at a very early age, and have been pointed out by Dr. Gibbons in his excellent paper on 'Renal Colic in Infants.' No calculus is formed, but blood, mucus, and crystals are found in the urine, and pain, tenderness, and colic occur in the lumbar

region. The patients are children of well-to-do parents, who are invariably themselves gouty. Dr. Dickinson gives several instances of a similar condition occurring at about the period of teething and giving rise to hæmaturia. These cases he describes as scorbutic, and in all the diet had been conspicuously wanting in fresh milk. That these symptoms are not always ascribed to their proper cause and are attributed to intestinal colic is due to the small amount of blood which passes with the urine, so that attention is not directed to the kidneys and ureters as the site of pain. On the other hand this may sometimes be excessive. Dr. Abercrombie has given me the notes of the case of a boy, aged 3 years, who was admitted under his care for hæmaturia, said to have commenced three weeks previously with pains in the legs, back, and abdomen. The urine was deeply blood-stained, but not smoky or porter-coloured, as it is in acute nephritis or hæmoglobinuria. Under the microscope nothing but blood corpuscles could be seen. The urine was always acid, there was no pain in micturition or at other times, and the blood was equally diffused through the urine when passed. The symptoms completely disappeared after 10 days, during which uric acid crystals were found in fair abundance in the urine as well as on subsequent occasions. These cases in fact bear a close analogy to what Sir Henry Thompson describes as uric acid storms in the adult. Besides hæmaturia pain is the most constant symptom, generally occurring suddenly and without warning, and referred to the lumbar or hypochondriac region and running down the course of the ureter towards the groin, the bladder, and the penis, and frequently causing retention of the urine; and this may exist to the extent of producing reflex irritation of an extreme character, as in the case of a child described by Henoch, who passed round fragments of the size of a pin's head which were recognised as uric acid concretions. She cried always before passing urine, and developed first convulsions and subsequently contractures of the toes of both feet and of the fingers and knee-joints. The attacks will intermit with greater or shorter intervals, and there is extreme tenderness to touch of all parts in the region of the kidney affected. It is, however, between the ages of 2 and 6 years (according to the tables of Sir Henry Thompson) that stone in the bladder is met with more frequently than at any age before 50—that is to say, that the

deposits from the tubules are more excessive soon after the first dentition when the organism is most in need of appropriate nourishment and most liable to reject those constituents which it cannot assimilate. The main sources of formation of salts in the urine of children were stated by the late Dr. Ralfe to be "indirectly from food by incomplete oxidation of the saccharine, amylaceous, and oleaginous principles, and from increased tissue metabolism, and the blending of crystals to form a calculus is aided by the concentration of urine from deficiency in the amount of water secreted by the kidneys and further by the irritation excited by their presence in the pelvis, which sets up pyelitis, and the resulting secretion, aided by small hæmorrhages, agglutinate them into a calculus which receives constant augmentation in the kidney, the ureter, and the bladder.

As to the frequency of stone in the children of the poor, Mr. Cadge agrees in the main with Sir T. Smith in attributing it to insufficient and almost arrested cutaneous excretion from imperfect clothing and uncleanness tending to disturb the due proportions of the normal constituents of the urine and lead to a relative or absolute excess of some one constituent, while the digestive organs are constantly liable to disarrangement from unsuitable food or from irregularities in the mother's diet, and he lays much stress on the impossibility of these children obtaining a proper and sufficient supply of sound milk. Dr. J. A. Cunningham accounts for the prevalence of stone in India as being due to the mountain ranges of limestone bounding the districts in which it is of most frequent occurrence, the rivers depositing lime in the soil from which the drinking water is drawn. Hot, dry summers inducing much perspiration, the urine consequently becomes concentrated and the salts crystallise out on any provocation, such as a diseased state of the urinary organs. Hot days and chilly nights are another predisposing influence, especially where clothing is insufficient. It is remarkable how frequently a stone may be latent in the kidney of a child and afford no evidence of its presence beyond the pyuria. This was pointed out by Dr. Gee in a paper read before the British Medical Association in 1883:—"In other cases of stone in the kidney the diagnosis becomes possible when there are symptoms more or less like those of renal colic, when there are symptoms like stone in the bladder and yet no stone can be discovered, or where the kidneys can be felt by

deep pressure." In the 2,594 necropsies at the Hospital for Sick Children, Great Ormond Street, to which I have previously referred, I find that there were 26 cases in which calculi were lying in the pelvis or in the ureter. Seeing the much greater frequency of stone in the bladders of boys than of girls, it is very remarkable that the majority of 14 occurred in females; 11 were on the right side, nine on the left, five were on both sides, and in one case the side is not stated. The ages of the patients varied from 9 months to 9 years. Most of them died from affections not directly referred to the urinary apparatus, and it may be presumed that in a large majority there were no symptoms pointing to the probable existence of calculus unless it were suspected from the existence of pyuria. In this list one case at least is not included—that of a boy, aged $8\frac{1}{4}$ years—upon whom I operated in 1892 for a calculus which was found blocking the commencement of the ureter. Nephro-lithotomy is, however, but rarely called for in children. One case is mentioned by Mr. Thornton where pain was referred to the left kidney, which was found by means of an abdominal incision to be quite normal, and calculi were removed by a loin incision from the enlarged right gland. Two cases in which stones were successfully removed from a girl, aged 11 years, and a boy, aged 3 years and 8 months, have been reported to me from the Pendlebury Hospital, and these are all the cases of operation that I have met with. It would thus appear that calculi are not infrequently impacted at the upper portion of the ureter, but seldom in any other part of its course. There are, however, one or two specimens in London hospital museums, and notably one at the Hospital for Sick Children, Great Ormond Street, showing calculi impacted at the vesical end of the ureter, and others I shall refer to later. Dr. Eustace Smith observes that "where the concretion passes from the kidney into the ureter and downwards into the bladder there is always pain, but the child suffers far less than an adult would do under similar circumstances." This is certainly not beyond the truth, for in the investigation of a large number of cases of calculus vesicæ it is rarely possible to obtain any story of the passage of the stone from the site of its origin to that of its resting place. I have elsewhere described the case of a boy, aged 10 years, who was handed over to my care by Dr. Barlow, and who, after a blow upon the loin, suffered frequently from attacks of violent pain in the lumbar

region with occasional hæmaturia. Repeated examinations failed to detect any calculus, and the symptoms subsiding, he was discharged. Two years afterwards a small stone was found and crushed. It was probable that an effusion of blood into the pelvis of the kidney followed the blow upon the back and that some remaining portion of the clot became the nucleus of a calculus which remained for some time in the ureter, but ultimately passed into the bladder, giving no symptoms of its later progress.

There is one symptom of calculus vesicæ in children to which full weight is barely given in the text-books, that is, the rough and almost gritty condition which the surface of the bladder presents to the sound when the symptoms of stone seem to warrant an exploration. This is constantly found to exist when no stone is present and when not even phosphatic concretion can be extracted. It is caused, I believe, by the extreme acidity of the urine exciting a spasmodic contraction of the muscular fasciculi of the bladder and throwing them into ridges and folds against which the point of the sound impinges. The condition is so frequent that it is one to remember as leading to a possibly mistaken diagnosis of stone, but it passes away as soon as the child has been kept warm in bed and the urine has been rendered less acid by means of drugs. Time and the improvement of modern instruments have greatly altered the views of surgeons of the present day with regard to the treatment of stone in the bladder of children. This change of front is due in great measure to the advocacy by Indian army surgeons, with their unrivalled experience, of litholapaxy in preference to any cutting operation. Successful as lateral lithotomy has proved in the hands of many surgeons, there are still objections to its general adoption. According to Sir Henry Thompson the mortality varies during the period of from 1 to 12 or 14 years from 1 in 11 or 1 in 28 cases or about 1 in 16. On the other hand, Mr. Bryant states that there were no deaths in 100 consecutive operations on boys at Guy's Hospital and the results of the operation upon natives at the hands of such surgeons as Surgeon Lieutenant-Colonels Keegan, Freyer, Cunningham, and many others, have given a very small mortality. Yet it is from these very surgeons that the strongest advocacy of litholapaxy comes. Besides the troubles incidental to a cutting operation, particularly hæmorrhage, which is often severe and difficult to check, there are many difficulties in lateral lithotomy which have

proved formidable to the most skilful and practised surgeons. But the more serious objections are found in the later consequences, such as stricture, fistula, and sexual impotence. The late Mr. Greig Smith, in the latest edition of his work, said:—"I have seen in the last nine years five operations for perineal fistula following perineal lithotomy, and I have been concerned in the treatment of one case of stricture and one of fistula from the same cause," these occurring in a district where stone is far from frequent. Recto-vesical fistula is one of the most troublesome of accidents which a surgeon can be called upon to rectify, and is certainly not an infrequent consequence of the operation. Although Sir Henry Thompson questions the possibility of injury to the vesicula by the knife, yet, difficult as it must necessarily be to obtain evidence on the point, there is much to warrant the belief that impotence in the adult not infrequently follows this operation in the child. Mr. Teevan reported four cases of sterile husbands among lithotomised patients. Langenbeck has called attention to the same danger, and Dr. Keegan believes the operation to be frequently followed by emasculation. It must be remembered that the statistics of lithotomy are largely derived from the results obtained by Cheselden, Sir Henry Thompson, Mr. Cadge, and others, who had special opportunities of practising that operation just as Indian army surgeons have lately had of studying litholapaxy, but for those to whom the opportunity comes but seldom the lateral operation presents as many, if not more, dangers and difficulties as litholapaxy, which, on the other hand, has far fewer after-consequences. On the other hand, it has been shown by Dr. Keegan that the objections urged against litholapaxy in children are really invalid, that the bladder of a boy gives ample room for the working of a small lithotrite and a medium sized aspiration tube, while the sensitiveness of the urethra is overcome by means of an anæsthetic. The liability to laceration of the mucous membrane of the bladder and urethra is theoretical and need not be feared if care and gentleness be exercised, and with regard to the smallness of the urethra he shows that if the meatus be divided the urethra of a boy from 3 to 6 years of age will admit a No. 7 or 8 lithotrite, and of a boy from 8 to 10 years a No. 10, 11, or even 14. The size of the urethra does not depend upon age. He advocates litholapaxy in male children, principally for two reasons—rapidity of cure and the absence of a cutting operation.

With regard to the size of stones that have been dealt with by this method, Mr. Freyer has removed a calculus weighing 808 grains from a boy, aged 9 years, and Dr. Keegan one of 700 grains (uric acid) from a boy, aged $9\frac{1}{2}$ years. The largest stones in the collection at the Hospital for Sick Children are a uric acid calculus encrusted with phosphatic material and weighing 229 grains from a boy, aged 2 years and 6 months, a uric acid stone of 178 grains from a boy, aged 5 years and 5 months, and one with a uric acid nucleus of 450 grains from a boy, aged 11 years. All these were successfully removed by the lateral operation. Most recent writers are inclined to be converted to these views. "The operation of election for stone in the bladder," said Mr. Greig Smith, "is undoubtedly Bigelow's. Lithotrity is an operation at least as good as, possibly better than, lateral lithotomy, while as regards remote results there can be no comparison." Mr. Southam, in describing two cases of lithotrity in boys of $3\frac{1}{2}$ and 10 years, mentions that of all the 11 stones previously removed by him by lithotomy each might have been successfully dealt with by lithotrity. The objection raised by Mr. Jacobson as to recurrence after lithotrity is met by Surgeon Lieut.-Colonel Keegan's conclusions from an experience of 110 cases of his own, "that recurrence of stone does not follow litholapaxy in male children any oftener than it does lateral lithotomy, provided the former operation is skilfully performed." The fenestrated lithotrites that are now employed render it possible to completely pulverise any stone which they are capable of grasping, supposing that its components are not so hard as to risk injury to the instrument, and thus none but the smallest fragments are left in the bladder. These by the aid of the large sized evacuating tubes, which can easily be passed into the bladder, can be removed by repeated injections from the evacuator, so that nothing but the finest particles is likely to remain. The bladder of a child being much more sensitive than that of an adult would be much more ready to resent and to expel any fragment left, and from the undeveloped condition of the prostate, and the absence of any depression or pouch behind it in which fragments could lie, as well as the healthy state of the mucous membrane as compared to that of an elderly person, there would be far less liability to formation of stone in the bladder. Any fresh calculus is much more likely

to have descended from the kidney, seeing how frequently when found in that organ they are multiple. Again, as I have formerly pointed out, it is easy by a second washing out of the bladder after a few days' interval to minimise the possibility of any fragments remaining.

The suprapubic operation has, owing to recent improvements in the method of its performance, been rendered much less difficult than formerly, and its dangers have been very greatly diminished. The higher position of the bladder in children, and the small amount of tissue which intervenes between it and the transversalis fascia render it more accessible than in adults, while from the small size of the veins and the thinness of the fatty layer which overlies the bladder the amount of hæmorrhage is seldom great and can easily be controlled. The peritoneum is not often seen and can easily be avoided. With care in the extraction of the stone the wound of the bladder need not be large nor should it in ordinary circumstances be lacerated. One question which time only can answer with regard to this operation is the condition of the bladder in an old patient who has had suprapubic lithotomy performed during youth. A line of cicatrix in the anterior wall must necessarily interfere to some extent with the normal power of contraction of the viscus, and if in addition the cicatrix be adherent to the anterior abdominal wall, as in many cases it must be, not only is the shape of the bladder greatly altered, but its power of expulsion must be considerably curtailed. As regards the recurrence of stone I published a case* in which I crushed a calculus weighing 130 grains, which had formed in the bladder of a young man, who exactly 12 months previously had undergone the suprapubic operation at the Seamen's Hospital, when a calculus of 338 grains had been removed.

The subject of the treatment of stone in children has an extensive literature, which teems with statistics. These, however, are drawn either from the writings of surgeons who practised before the days of antiseptics or the introduction of litholapaxy, or from the experience of Indian army surgeons upon native children, and are, therefore, open to objection on these grounds. For the sake of comparison, therefore, I have had collected, thanks to Mr. Templeton, the results of operations in children under 12 years of

* 'Clinical Journal,' April, 1896.

age from six hospitals in various parts of the kingdom during the last 10 years.* These are as follows :—

| — | No. | Recovered. | Died. | Percentage of deaths. | Percentage of recovery. |
|-------------------------|-----|------------|-------|-----------------------|-------------------------|
| Litholapaxy | 49 | 45 | 4 | 8·1 | 91·8 |
| Lateral lithotomy .. | 17 | 16 | 1 | 5·8 | 94·1 |
| Suprapubic operation .. | 65 | 59 | 6 | 9·2 | 90·7 |
| Totals | 131 | 120 | 11 | 8·3 | 91·5 |

The percentage of recoveries after the lateral operation is nearly the same as in a collection of 75 cases operated on at the Hospital for Sick Children, Great Ormond Street, before 1890, and a little below that in the tables of Sir Henry Thompson (95·41), but above that of Mr. Charles Williams at the Norfolk and Norwich Hospital (93·73). The percentage of recoveries of the total number is, however, smaller than that in any of the three tables of the results of lateral lithotomy. Mr. Barling has collected † the results of the three operations in children under 10 years of age :—

| — | No. | Recovered. | Died. | Percentage of recoveries. |
|----------------------------|-----|------------|-------|---------------------------|
| Litholapaxy | 44 | 43 | 1 | 97·7 |
| Lateral lithotomy | 50 | 48 | 2 | 96·0 |
| Suprapubic operation | 56 | 46 | 10 | 82·6 |
| Totals | 150 | 137 | 13 | 91·3 |

* The hospitals from which these statistics were kindly supplied were the Hospital for Sick Children, Great Ormond Street; Manchester General Hospital for Sick Children; Leeds General Infirmary; St. Peter's Hospital for Stone, Henrietta Street, W.C.; Royal Hospital for Sick Children, Aberdeen; and Royal Hospital for Sick Children, Edinburgh.

† 'British Medical Journal,' March 9th, 1895.

This puts the suprapubic operations in a much less favourable light, and gives to litholapaxy the highest percentage of recoveries of any of the three operations. These figures are, of course, too small from which to draw any definite conclusions. It may be presumed that in a certain number at least the suprapubic operation was selected in preference to either of the other alternatives on account of the size of the stone, the smallness of the pelvis, or for some other reason, and this would account for its showing a heavier mortality than the others. In a paper which I read before the Royal Medical and Chirurgical Society in 1890 I detailed the results of 114 consecutive operations for stone at the Hospital for Sick Children, Great Ormond Street. Out of 75 cases of lateral lithotomy there were 71 recoveries, a percentage of 94·6. Hæmorrhage, abscess, erysipelas, and orchitis were among the immediate casualties that followed the operation. To supplement the table in this paper there have been, since its publication, 16 patients operated on for calculus vesicæ at the Hospital for Sick Children, Great Ormond Street, three by lateral lithotomy, all of whom recovered; seven by litholapaxy, of whom six recovered and one died; and six by suprapubic operation, of whom four recovered and two died. These are included in the first of the above tables, the death after lithotripsy was due to pyonephritis and morbus cordis. One case which came under my own care was instructive. A boy, aged 6 years, was found to have a stone of moderate size which was easily seized with the lithotrite and a small amount of material was crushed, but the remainder was so hard that no impression could be made upon it, and I desisted from further attempts from fear of breaking the lithotrite and at once removed the stone by the lateral operation. It weighed $2\frac{1}{2}$ drachms, and was composed of oxalate of lime with a slight covering of phosphatic material which had been partly detached by the lithotrite.

Dr. White, in an excellent article in Starr's 'Text-book of Diseases of Children,' urges "that in every case of calculus in male children litholapaxy, on account of ease of performance, low mortality, speedy recovery, and absence of danger of emasculation, should be the operation of predilection." He quotes as the most recent statistics of the three operations those of Dr. A. T. Cabot. As all the cases were operated upon after 1878, and as they are classified according to age, they are especially valuable for the

purpose of this paper. They may be compared as follows for children under 14 :—

| — | No. | Deaths. | Mortality. |
|--------------------------|-----|---------|--------------------|
| Suprapubic.. .. . | 591 | 74 | Per cent. 12·52 |
| Perineal lithotomy | 539 | 16 | 2·96 |
| Litholapaxy.. .. . | 241 | 4 | 1·66 |

I am, therefore, inclined to emphasise rather than to retract from the propositions offered in my former paper: (1) that in the cases of boys and girls stones of moderate size should be dealt with by litholapaxy; (2) that stones composed of oxalate of lime, or of such size as not to be readily grasped between the blades of a lithotrite, should be removed by the lateral operation in the case of boys; and (3) that the suprapubic operation should be reserved for stones of very large size or inconvenient shape in boys or girls, or cases of calculus embedded in a sacculus of the bladder or impacted in the mouth of a ureter. That these propositions are not absolute must be evident. Cases have occurred to myself and others where the lithotrite cannot be introduced owing to some puckering of the mucous membrane of the urethra, and the lateral operation may be forbidden on account of a narrowed and rickety pelvis, but I think it is proved by the above tables that the tendency of surgeons is, when possible, to use the lithotrite instead of the knife, and that with proper care such a course is followed by the best results and is free from the after-consequences of a cutting operation. At the same time it is not every surgeon who has had experience of the use of a lithotrite, and to such must be left the choice of one of the other operations. In girls, unless the stone be very large, when it should be removed by the suprapubic operation, lithotrity is always easily available, and it avoids the troublesome after-consequences of over-dilatation of the urethra or the danger of a vesico-vaginal fistula. The advice here given is entirely from the point of view of the patient, but to the practitioner who is called upon to deal with a stone and who has not had personal experiences of lithotrity it is difficult to offer suggestions. To see lithotrity performed by Sir Henry

Thompson, or some of those who have had large experience in India, is like witnessing the feats of Roberts with a billiard cue. But the manipulative dexterity, which is certainly essential, is only acquired by a long apprenticeship and considerable experience. On the other hand the pitfalls of the lateral operation are many and often alarming to those who are not in the habit of witnessing or of performing it. The suprapubic operation is in itself simple and easy of performance, and is probably that which under such circumstances should be adopted. At the same time, though I do not place much reliance upon statistics, it is the one that in the above tables presents the most unfavourable results, and in my own opinion, and in the opinion of many other surgeons, the results would appear still worse if it were possible to collect all the cases in which this operation has been performed in recent years. It must not be forgotten that where there is a stone in the bladder there is, or has probably been, some amount of pyelitis, and Mr. Southam, in his relation of the two cases mentioned above, gives some very good advice with regard to the previous treatment of the patient—rest in bed, milk diet, and sterilisation of the urine by boric acid or salol given internally, and if the urine contains much pus the bladder should be washed out thoroughly more than once with an antiseptic solution. Shock should be avoided by thorough protection of the patient against surface chilling.

There must always be met with some rare cases for which the suprapubic operation is alone available, such as are indicated in the third of the above propositions. Such a case I related in 'The Lancet' of October 22nd, 1887, in a boy, aged 1 year and 4 months, weakly, rachitic; symptoms of calculus had existed for three months, and a stone was found on sounding which did not readily move in the bladder. The very narrow orifice of the pelvis, which was deformed by rickets, did not promise success to the lateral operation if performed. A suprapubic opening was made and a stone was felt lying in a sacculus in the region of the trigone below and between the orifices of the ureters, and overlapped by the mucous membrane of the bladder to such an extent that it became necessary to raise the calculus from below by the assistance of the forefinger in the rectum. The stone was of uric acid, weighing 53 grains, and was of the shape of a blunted cone, the apex of which was buried in the walls of the bladder. The

wound healed on the sixth day and the boy was discharged at the end of a fortnight.

URETERAL CALCULI.

In connection with the impaction of calculi at the vesical orifice of the ureter my colleague, Mr. Pitts, has favoured me with two most interesting cases of this condition. A boy, aged 9 years, was admitted to the Hospital for Sick Children, Great Ormond Street, with symptoms of stone in the bladder which were verified by the sound. On bimanual examination two stones were felt, one on each upper lateral portion of the bladder—that on the right side of about the size of an almond and fixed, and that on the left movable and of the size of a cherry-stone. The suprapubic operation was performed and a stone was removed of the size and shape of a plum-stone. No other could be felt by the finger in the bladder, but on repeating bimanual examination a stone could be plainly felt in the position of entrance of the right ureter. Careful examination of this spot within the bladder revealed a protrusion of the mucous membrane, and probing the apex of this protrusion a stone could be felt encysted in that part of the ureter which passes through the bladder wall. The mucous membrane was incised with scissors and the stone, which was pyramidal in shape, was made to project into the bladder by the finger of an assistant in the rectum. After very prolonged and careful manipulation it was finally loosened and extracted by aid of a bent director. It was about half an inch in its longest diameter, somewhat pyramidal in shape, with the apex projecting at the orifice of the ureter and the base firmly grasped by the surrounding structures. The wound united and the boy was discharged well in less than six weeks. A second case, which was under the care of Mr. Pitts at St. Thomas's Hospital, is of still greater interest and rarity. A thin cachectic child, aged 4 years, who had had symptoms of calculus vesicæ for two months, had been admitted to another hospital, where he was sounded under an anæsthetic, but nothing abnormal was found. The child became much worse, and three months later came under the care of Mr. Pitts. There was then retention of urine, the bladder was distended to the umbilicus, the penis was swollen, great pain was complained of when the catheter was passed, and the urine was found to be very offensive, thick, and looking like pure pus,

escaping very slowly through the catheter, in the eye of which a small stone was found. On April 6th a suprapubic incision was made. No stone was found, the wall of the bladder was much inflamed, and the surface of the mucous membrane was red and granular, with some indications of sacculation. A large drainage tube was inserted and the patient was placed in a boracic bath. This was changed for boracic irrigation on the sixth day owing to signs of bronchitis. Six weeks later an attack of jaundice supervened, which was followed by inflammation of the right testicle and cord. On June 30th the tube was still in the bladder and no urine coming through the penis. On July 18th an examination was made under chloroform. The bladder was found empty, but on rectal examination a hard nodular mass was felt on the left side between the rectum and the bladder. The cystotomy wound was enlarged and an ulcerated opening was found in the trigone of the bladder near the neck which led to a cavity outside the bladder which contained four oval stones that were with difficulty dislodged and manipulated from the pouch into the bladder and so removed. The largest of these calculi was of the size of a small plum-stone. The boracic bath was repeated and the child made a good recovery. Mr. Pitts adds, as a note to this exceedingly instructive case, that in the absence of any stone on first opening the bladder, and from the suppurative condition found, together with the subsequent inflammation of the epididymis and cord, the condition was for a long time believed to be tuberculous. Hence the delay in the second operation, which resulted in finding the stones and curing the patient, a result which redounds to the credit of the surgeon. Such cases as these admit of no other treatment than by the suprapubic operation, which was clearly indicated beforehand in all of them.

LECTURE III.

PATENT URACHUS.

MR. PRESIDENT AND GENTLEMEN,—A patent condition of the urachus after birth is not exceedingly rare, and is one of the causes of those masses of granulations which are found springing from the umbilicus, out of the centre of which, and issuing from a minute aperture, a fluid with all the characteristics of urine often exudes in small quantities. A ligature applied to the base of this fleshy tumour at once destroys it and obliterates the canal leading to the apex of the bladder. This condition is usually noticed in very young infants soon after the separation of the cord, but Sir T. Smith relates a case in which it occurred in a boy, aged 2 years, and Mr. Bryant one in a boy, aged 8 years, and the patency will occasionally persist into adult life, as in the case described by the late Mr. Paget, of Leicester, of a man, aged 55 years, from whom he removed a ring-shaped calculus by a finger passed down through the umbilicus and into the urachus. This and another patent urachus in an infant he succeeded in closing by paring the edges and uniting them with harelip pins. Should ligature of the granulation growth fail to close the canal, this may be effected by means of the electric cautery or by a plastic operation.

Two very interesting cases are recorded, in which the urachus was reopened by pressure of the urine from below: the first by Mr. Savory, of a boy aged 13 months, who had difficulty and pain in micturition, and presented the symptoms of calculus vesicæ. Gradually an abscess formed at the umbilicus, which on being opened gave exit to urine. The boy gradually sank, and at the *post-mortem* examination there was found a polypus in the bladder obstructing the ureters and the orifice of the urethra. The urine thus obstructed forced an opening through the recently-closed urachus, and thus gave rise to the abscess.* A similar case is related by Mr. Ball as occurring in a boy aged 10 years. Mr. Sutton states† that the urachus may sometimes grow equally

* The specimen is to be seen in St. Bartholomew's Hospital Museum.

† 'The Lancet,' February 5th, 1887, p. 256.

with the bladder, retain a communication with it, and give rise to a so-called bifid bladder. It may dilate unequally and form a chaplet of small cysts, and in some rare instances may serve as a starting-point of a cystic tumour outside the peritoneum of enormous dimensions. One examined and reported by Mr. Sutton and Dr. Aveling weighed nearly 5 lbs., and Mr. Lawson Tait has recorded a number of instances of similar tumours under the name of extra-peritoneal cysts.

HIATUS OF THE BLADDER.

To account for the existence of that distressing deformity, hiatus of the bladder, several theories have been suggested. Dr. Ahlfeld opines that these persistent fissures in the middle line of the body are due to excessive traction of an abnormally distended umbilical vesicle and allantois, which pulls the viscera forwards. This distension is due to a general dropsical tendency in the foetal membranes and appendages, and in support of this Dr. Magnussen recites three cases of ectopion (*sic*) in which spina bifida and meningocele—that is to say, dropsical processes in the vertebral region—were present. Against this I may state that of the many cases of this defect that I have seen I remember none in which it was associated with these deformities, and they may well have been instances of concomitant defects of development in the median line. Dr. Paul Reichel, of Würzburg, maintains that the theory of Dr. Duncan that congenital defects of the bladder and penis are caused by atresia of the urethra and the bursting of these organs from pressure of the urine is not tenable. Ectopion (*sic*) of the bladder is simply a persistence of the primitive cleft throughout the greater part of its extent, preventing the formation of the anterior wall of the bladder, the anterior abdominal wall, and the symphysis pubis, besides interfering with the formation of the external genitals. The cleft may be partly closed, forming various modifications of the deformity. In other words, it is an arrest of development which gives rise to this condition as well as to epispadias. M. Tourneux and M. Durand explain it as the result of the undue extension forwards of what the former has named the “urethral lame,” a prolongation of the “bouchon cloacal,” which intervenes between the lower end of the urogenital sinus and the exterior, and thus

shuts in the sinus. This leads to an increase in the size of the anterior part of the aperture by which the urogenital sinus is put into communication with the exterior.* The extent may vary from a complete exposure of the posterior wall of the bladder, with separation of the recti and imperfect union of the symphysis pubis, to the slightest condition of epispadias, where only a portion of the wall of the urethra is exposed, and where some sphincter power remains, so that the most distressing feature of the deformity, the uncontrolled dribbling away of urine, is not met with, and every variation between these two extremes. Sometimes the bladder, though in itself perfectly formed, may prolapse through the urethra or even the urachus. The appearances of this deformity are so familiar as to need no further description, but there are certain conditions associated with it which are not easy of explanation. The tortuous and dilated state of the ureters, which is a frequent accompaniment, may be due to the irritation of the surface from exposure, which induces a constant discharge from the ureters and produces the same conditions as ensue from enuresis due to other causes. Although this complication has been frequently observed, it can hardly be constant, or the well-known healthiness of some individuals who are afflicted with this deformity, and who pass into adult life, could not be maintained. The tendency, however, of these patients is to die from secondary inflammatory conditions and kidney complications. Dr. Ultzmann,† confirming this, quotes M. Berger,‡ who found that of 71 cases collected by him only 23 reached the age of 20 years, the causes of death being skin inflammations, erysipelas, secondary inflammatory affections, and frequently kidney diseases. The state of hyperæmia and congestion of the mucous membrane are most favourable to the existence of micro-organisms and to their extension in the urinary tract. It is due to the establishment of these micro-organisms that there is maintained a chronic inflammation of the mucous surface, from which an alkaline or feebly acid urine is discharged, which deposits phosphates in such abundance as to be the greatest cause of distress to the patient, and the most troublesome obstacle to successful treatment by the surgeon.

* See Ballantyne, 'Edinburgh Hospital Reports,' vol. iv.

† 'Krankheiten der Harnblase,' 1890.

‡ 'Semaine Médicale,' 1883.

The operative measures for the alleviation of this defect I have only space to enumerate. First, there are the methods of Dr. Daniel Ayres, Dr. Pancoast, Professor John Wood, and Mr. Holmes, which aim at forming a covering for the exposed mucous membrane by turning over flaps of skin from the surface of the abdomen, and so covering the exposed surface that the urine is directed on to the urethra and guided into the orifice of an apparatus as it falls uncontrolled from the ureters. By this proceeding the urine is made to issue from a single aperture, and further attempts to improve the shape of this opening can be made by raising a flap of scrotal tissue and lifting it over the penis to attach it to one turned down from the surface of the abdomen. Many modifications of this plan have been followed by myself and others, and it is impossible to give outlines for the direction of the incisions, as they must be adapted to the requirements of each individual case, and tissue must be drawn from the parts where it can best be spared, and where resulting cicatrization will be least harmful. I have found that the skin of the prepuce, which is usually redundant, can generally be made available to cover some part of the aperture.

It is remarkable how tolerant of operations are the subjects of this deformity. I have on several occasions removed the testes or ovaries on both sides, with large hernial sacs, as a preliminary to the plastic operation which has been performed at a later date. But, notwithstanding these facts, the proceedings are very disappointing as regards ultimate results. Complete covering is rarely obtained by one operation, and small apertures require to be dealt with by subsequent manœuvres. Trendelenburg in one case operated ten times, and one of my cases has been at least six times under my hands. The disappointments met with are due to the persistence of small openings caused by the permeation of urine through the edges of the united flaps, which it is very difficult to close. But the greatest drawback to success is due to the septic condition of the urine, and the large quantities of phosphatic material which it secretes. Sometimes this will accumulate to such an extent as to form considerable calcareous masses. A child for whom I succeeded in making a very fair covering for the bladder requires every few months to have one or more of these masses removed. The hairs, too, which grow from the overturned flaps of skin become hypertrophied and form

nuclei upon which these concretions collect. Professor John Wood, who had an experience of 40 cases, could only say that they were rendered much more comfortable, but does not mention the casualties or troubles subsequent to operation. Distressing as this condition appears to observers, it must be borne in mind that many subjects of this deformity are in other respects strong and healthy and live to a good age, and personally it is only in the most urgent cases that I am inclined to propose an operation which is not without risk, entailing long confinement and many subsequent procedures, and which at best may afford but little alleviation. Other methods have been tried, such as that recommended by Mr. Simon, of establishing a fistulous communication between the ureters and the rectum, or removal of the mucous membrane of the bladder and planting the ureters in the gutter of the penis or in the rectum, but the mortality after these proceedings is very heavy, mainly in consequence of inflammation spreading up the ureters and causing an acute septic interstitial nephritis. Trendelenburg and others have sought by dividing the sacro-iliac synchondrosis, which should be done before the fifth year, to narrow the interval between the pubic bones and to approximate the margins of the exposed bladder, and then suture them together. Mr. Makins has published* an account of this operation which he performed upon a boy, aged 5 years, and which was fairly successful. He found a great improvement in the condition of the urine to result from the application to the mucous surface of pinewool bags impregnated with perchloride of mercury. By thus subduing the septic condition, the character of the urine improves and the phosphatic deposits diminish, and this indicates a course which should certainly be adopted before proceeding further. In the same way, when the ureters are healthy, I believe that much assistance might be gained by temporarily maintaining a catheter in each, and so preventing the urine from coming in contact with the mucous membrane or with the edges of the united surfaces. A mode of operating which seems to promise greater success is that which is suggested by Mr. Milton, of Cairo, and which is described by Mr. Anderson.† This consists in dissecting up flaps of the mucous membrane of the bladder and urethra for about half an inch from without

* 'Transactions of the Royal Medical and Chirurgical Society.'

† 'Transactions of the Clinical Society,' 1892.

inwards and uniting them by a double set of sutures over a large catheter. Two marginal skin flaps are then dissected up from without inwards, and tension being relieved by two lateral incisions, their edges are brought together over the closed bladder by means of wire sutures and harelip pins. Lastly, I must not omit to mention the ingenious suggestion offered by Mr. Reginald Harrison, who, from a boy, aged 15 years, removed the left kidney, and 11 months later attached the upper end of the right ureter to a wound in the loin. The urine that issued was neutral and free from the tendency to form phosphatic deposits which existed when flowing over the surface of the bladder.

EPISPADIAS.

Epispadias is not a frequent deformity, and may exist independently of any defect of the abdominal walls and be confined only to that portion of the urethra which passes through the glans, or may extend backwards into the spongy portion of the canal. But since behind these parts there exists more or less sphincter power the results are not so distressing as in the more pronounced form where the opening extends backwards to the prostatic region, although the bladder and the symphysis pubis may be normally formed. This latter form imperatively calls for some attempt on the part of the surgeon to remedy the condition, but again, as in *hiatus vesicæ*, the great obstacle to success is the constant and uncontrolled discharge of urine, although in these cases there is not the same tendency to phosphatic deposit owing to the normal and protected condition of the bladder. I have once attempted to remove this difficulty by draining the bladder through a perineal incision, though in this instance the result was disappointing. Time does not permit me to describe the various plans which are recommended for the remedy of this defect, but by far the most practical suggestion is that recently described by Dr. Cantwell.* The patient should be at least 10 years of age. The bladder is first drained through a perineal wound. When this is established two parallel lines of incision are carried down between the mucous membrane and the skin from the symphysis to the end of the glans joining above the bladder opening. A flap is then formed of the whole urethra from the glans backwards, and

* 'Annals of Surgery,' 1895, vol. ii, p. 690.

this being held up the cavernous bodies are separated. The urethral flap is then laid in the gutter thus formed and held in position by two sutures through the mucous membrane and the skin, and tied on the under surface of the penis. A silver catheter is then laid in the urethra and a canal formed by continuous suture of the free edges of the mucous membrane over it. Above this the corpora cavernosa are brought together and reunited by a continuous suture. The skin-flaps are joined over this and a few stitches are passed through the fat of the mons Veneris. Mr. Clutton informs me that he has had three most satisfactory results from this plan.

In a very complete monograph,* Dr. J. W. Ballantyne has drawn attention to that very rare malformation, so-called epispadias in women, of which he has collected 33 recorded observations. I cannot do more than quote his conclusions, but his admirable paper is of the greatest interest as drawing attention to a cause of enuresis in females which may easily be overlooked unless careful examination of the parts be made:—"It has only one symptom—more or less complete incontinence of urine—and in its least marked degree even this may be absent. It consists in the absence of a greater or smaller part of the anterior urethral wall with the division of the clitoris into two parts, and the presence of a median gutter or groove in the region of the anterior commissure of the vulva: the symphysis pubis is normally closed, and so is the anterior bladder wall. In its least marked form the urethra simply opens above the clitoris instead of below it, but in all the other forms there is splitting of the clitoris, and the existence of a median furrow. Palliative treatment consists in the wearing of a urinal; radical methods are found in plastic operations for the lengthening and narrowing of the urethra and for the restoration of the anterior vulvar commissure and clitoris."

Mr. Makins, in an obstinate case of this defect, successfully closed completely the inferior opening of the bladder and established a supra-pubic urethra.

HYPOSPADIAS.

Hypospadias is a fairly common defect, and varies greatly in its degrees, and examples are frequently met with in which the

* 'Edinburgh Hospital Reports,' vol. iv.

opening of the urethra may be situate at any point between the perineum and the spot at which the frenum is attached to the body of the penis. The two chief points of interest in regard to this deformity are as to the possibilities of procreation and the question, which not unfrequently arises in extreme cases, as to the sex of the individual. These I must not discuss, but must limit myself to the question only of its effects on the urinary apparatus. There is, even in those cases where the orifice is in the perineum, a power of control, since the opening of the urethra is always in front of the membranous portion, but such patients are unable to micturate except in a sitting position, and an operation is necessary in order to direct the urine to a point nearer to the end of the penis. The most usual position for the opening of the urethra is just behind the attachment of the frenum. It is generally extremely minute, and many cases have come under my notice in which it has been declared that no opening existed, a state of things which is almost unknown. The minuteness of this opening, at whatever position it is situate, may lead to difficulty in passing water, and in some cases that I have seen the orifice has become so obstructed by mucus and dirt as to cause pain and delay, and in one instance a gleet discharge. This trouble is easily remedied by opening the urethra for a short distance and attaching the lappet-like flaps by stitches to the skin on either side. I have in several cases been able to trace an hereditary transmission of this defect, and Mr. Lingard relates an instance * in which it was traced through six generations, and tells of a case where it was transmitted by the widow of a hypospadian to four sons by a second husband who had no such deformity. I have met with one case of congenital fistula where a probe passed through the natural meatus issued at an orifice midway along the under surface of the penis, the edges of which were thin and resembled those of the meatus. Mr. Holmes describes a case in which there were four openings at different parts of the perineum, from all of which the urine issued as well as from the meatus. A case has been described by Mr. Gay † in which there existed a double urethra, one on the dorsum and one in the normal position, both communicating with the bladder but not with one another, and another similar case has been

* 'The Lancet,' April 19th, 1884, p. 703.

† 'Transactions of the Pathological Society,' vol. xiv.

recorded.* An elaborate article on the origin and nature of these fistulæ has been written by M. René le Fort.†

CYSTITIS.

A chronic catarrh of the bladder occurs from the presence of calculus or tumour, or any cause inducing urinary retention, but an acute state of inflammation rarely arises spontaneously. One instance occurred in a child under my care upon whom I had operated for the cure of a spina bifida by the injection of Morton's solution. Although this was followed by no constitutional disturbance, there was complete and obstinate retention which persisted for over three weeks, during which a catheter had to be passed every few hours, and there ensued an inflammation of the bladder with muco-purulent urine and all the other symptoms of cystitis. These gradually disappeared, and a subsequent injection of the tumour caused its consolidation, and was not followed by similar symptoms. The child was aged 8 months, and is now perfectly well. But there occurs occasionally what has been named an "acid purulent cystitis," to which my notice was first called by Mr. Treves, who has kindly supplied me with the notes of the case which directed his attention to it:—"A boy, aged 2 years and 9 months, passed blood and pus from the urethra. When 12 months old the urine was continuously full of pus, and the discharge has continued without change ever since. He passes water 17 to 18 times in the 24 hours, half an ounce at a time. There is no pain and no wasting. Urine: specific gravity 1,023, full of pus, no mucus, many uric acid crystals, no renal casts, and always markedly acid. No tubercle bacillus. The bacterium coli commune found in almost pure cultures. He has been repeatedly sounded and examined under ether with no result. There is a very tuberculous history in the family. The child looks well and is not wasted. There is no fever, and no evidence of renal disease." This affection has been studied and described by foreign authors, but has been recognised very rarely in this country. Some years ago Clado directed attention to special rod-like organisms associated with

* 'British Medical Journal,' 1891.

† 'Annales des Maladies des Organes Génitaux,' vol. xiv, 1896, p. 624, *et seq.*

pus which occurred in acid urine, and which he called pyogenic bacteria, but which have since been identified as the *bacillus coli communis*, and it has been shown by Professor Schmidt and others that their passage into the bladder induces cystitis. The anatomy of the parts, as first insisted upon by Dr. Escherich, explains the greater frequency of the condition in girls than in boys. In 1894 he reported seven cases in girls, the patients ranging from 7 to 9 years of age. He regarded the condition as somewhat trivial, curing each case by vesical lavage with creolin lotion and the internal administration of salol. Trumpf, in more than one paper, would have us regard the condition as worthy of occasional anxiety. He brings forward 29 cases which were under his own observation; 21 were girls and eight boys, the youngest was 5 weeks old and the oldest 9 years. He divides the cases into trivial and grave. In the former the symptoms are principally local, and in no way affect the general health of the child. Ten were of this nature, three of them suffering from vulvitis at the same time. In the graver form rapid emaciation takes place, and severe local and constitutional symptoms manifest themselves. Apathy, somnolence, collapse, and vomiting are associated with strangury, hypogastric and lumbar pains, and in two of his cases pyelitis, uræmia, rapid emaciation, and death. The urine in both types is offensive, acid, and albuminous, with varying quantities of pus, leucocytes, and epithelium, according to the severity of the attack. It is usually of a pinkish or opalescent colour, and on bacteriological examination the *bacillus coli* is readily found. In severe forms the deposit may amount to half the total bulk of urine passed. Mild cases recover on an average in two weeks. Dr. Denys thinks that direct infection of the bladder is only possible when there is a slight catarrhal condition; others argue that the vesical infection occurs from contact with the bacillus-laden coils of intestine. Dr. Escherich, Dr. Czerny, and Dr. Trumpf find the *bacillus coli* present in the blood in cases of enteritis, especially the clinical variety known as follicular. In a recent work by Dr. Melchior, of Copenhagen, which is reviewed by Dr. Lindley Scott,* he concludes that the colon bacillus is the bacterium of the urine and the organism most commonly associated with cystitis, pyelitis, and pyelonephritis, and he found it in all varieties of cystitis, in acid,

* 'British Journal of Dermatology,' September, 1897.

neutral, and ammoniacal urine. When the secretion was acid Dr. Melchior always obtained a pure culture of the colon bacillus; when ammoniacal it always proved to be accompanied by one or several of those micro-organisms which have the power of decomposing urea. He dismisses internal medication as practically useless, and believes only in irrigation of the bladder with solutions of nitrate of silver varying in strength from 1 in 500 to 1 in 200. A close perusal of this book is invaluable to those interested in the subject, and the whole study of this form of cystitis is deserving of much closer attention than it has received in this country.

TUBERCULOSIS OF THE BLADDER.

Tuberculous ulceration of the bladder occurs much more frequently after the age of puberty than before, but I have met with a few cases in children, and there are records of others. The diagnosis presents even more difficulty in children than in adults, and the question of most vital importance as regards treatment, but which is at the same time most difficult to determine, is whether the ulceration commences primarily in the mucous membrane of the bladder or is secondary to disease in some of those organs which communicate with it. In the case of the testes or vesiculæ the primary focus is readily manifest, but in the case of the kidneys it is not so easily determined. Mr. Mansell Moullin, writing on this subject, thinks that primary tubercle of the bladder is probably more common than is generally supposed, and the secondary origin is in all probability exaggerated. He considers that the neck of the viscus is involved more frequently than the fundus, not because of the proximity of the openings of the ureters and vasa deferentia, but because of the greater vascularity of that part and its more active functional capacity. It is as an aid to distinguish its independent origin, as apart from being a sequel to similar disease in the kidney, that the cystoscope may prove of the greatest service. Not only may the extent and character of the ulcer be revealed, but the nature of the discharge from each ureter may be seen, and the presence or absence of pus therefrom will afford evidence of the state of the respective kidneys. In an article in the '*Deutsche Zeitung für Chirurgie*,' Dr. Griffenhagen points out that the bladder is most frequently infected from the kidneys,

less often from the prostate, and comments on the remarkable resisting power of the mucous membrane of the bladder to the invasion of the tubercle bacillus. He had met with many examples of chronic renal tuberculosis with no bladder complication, yet the orifice of the ureter is especially liable to be affected by this bacillus. I have recently had under my care a young man who had had one testicle removed for tuberculous disease, and whose remaining testis and both vesiculæ present the typical characteristics of tuberculosis of those organs. The bacillus has been detected in his urine, but he has no frequency of micturition or any other symptom of bladder involvement. In the 'Transactions of the Clinical Society,' 1875, the case of a girl, aged 9 years, is related by Mr. Humby in which ulceration had at two points perforated the bladder; one at the apex led into a circumscribed abscess in the peritoneum, which had discharged at the umbilicus, and the second, at the back of the viscus, had opened into the bowel, through which matter had escaped by the anus.

The diagnosis of these cases from those of calculus is not usually difficult, one pronounced feature being that in tuberculosis the frequency and pain of micturition are as great or greater during night, whereas rest allays and diminishes these symptoms in cases of calculus. The amount of hæmorrhage, as a rule, is slight, but may be excessive if ulceration is extensive or deep. I have already pointed out that in renal tuberculosis the urine remains acid, but when the bladder is invaded it usually becomes alkaline with the increase of purulent discharge. Reliance cannot be placed upon the absence of the tubercle bacillus from the urine, but when present in large numbers it indicates an extensive amount of disease. In the case of a young woman whom I saw some years ago, the disease had advanced too far for any hope of successful treatment, but in a boy who was under my charge the disease was certainly for a time confined to the bladder, and I gave considerable relief by making a perineal opening and thus draining the viscus. But since that time the modern mode of suprapubic cystotomy has come into practice, and undoubtedly offers a means of relieving this very distressing malady. Mr. Battle has brought the advantages of this operation to our notice by an account of a very interesting case.* The patient was a girl, aged 20 years, and

* 'Transactions of the Clinical Society,' 1890.

therefore above the age to which I have endeavoured to confine my observations. But the treatment which he successfully pursued was undoubtedly that which I should myself follow. After giving a fair trial to general and local treatment he performed suprapubic cystotomy. He found that partial healing had taken place as a result of previous treatment, but an extensive ulcer remained, and the surface of this was scraped, and then dabbed over with a solution of chloride of zinc. The urine, which had been slightly alkaline, became acid, and in less than a year after being first seen the girl appeared perfectly well, and could hold her urine for three hours. I agree with Mr. Battle in preferring the application of chloride of zinc, which is so efficacious in the treatment of tuberculosis of other parts, to the use of the actual cautery, which has been applied successfully by M. Guyon, M. Reverdin, and others. Mr. Cheyne believes that much of the benefit of this operation lies in the rest which is given to the bladder by the drainage of the viscus, and in this way he treated a boy, aged 4 years. Mr. Morton, after performing the suprapubic operation, scraped the ulceration and rubbed in iodoform, afterwards keeping up drainage by the aid of Cathcart's suction apparatus. The ulceration in the bladder healed, but the patient died with tuberculosis of the left kidney and calculus in the right ureter. A patient was shown at St. Bartholomew's Hospital who exhibited tuberculous ulceration of the sinus left by a suprapubic wound which had been made for the treatment of ulceration of the bladder. The plan of injecting iodoform and other compounds has not proved satisfactory, although Professor Landerer claims value for the injection which he prescribes, composed of balsam of Peru, chloride of sodium, and other drugs.

TUMOURS OF THE BLADDER.

Tumours of the bladder occur but rarely in childhood. One such case I saw at the Hospital for Sick Children, Great Ormond Street, under the care of Mr. Marsh.* The girl was aged 2 years, and when 1 year old a dark fleshy-looking growth projected from the vagina, and was ligatured and fell off. Then came retention of urine, with attacks of pain and straining. On examination under chloroform a large bunch of polypi were found

* 'Transactions of the Pathological Society,' vol. xxv.

just within the vulva, projecting from the vagina and distending the urethra. They varied in size and colour, some being pale and others dusky purple. Death took place 16 months after the disease had been first observed. The report by Mr. Butlin and Mr. Marcus Beck described it as an overgrowth of connective tissue. Two cases have occurred in the wards of my colleague, Mr. Owen, both happening in boys, for one of which perineal and for the other suprapubic cystotomy was performed. I have inspected all the specimens of this form of tumour which are to be found in the various hospital museums in London. The best known is that in the Hunterian Museum, which was presented by Mr. Crosse, of Norwich, and which is depicted in his treatise on calculus. The patient was a boy, aged 2 years, whose illness began about six months previously to his death with frequent micturition and dysuria. There was no hæmaturia. Perineal section was eventually performed, and many gelatinous polypi were excised. The child died 44 hours after operation. Mr. Targett, in a most comprehensive paper,* groups together all these polypoid growths attached to the mucous coat of the bladder in children, which are described as mucous polypus, fibro-sarcoma, fibro-myxoma, myxosarcoma, and the like, and allowing that the vast majority of primary vesical growths of children are of the polypoid type—that is, rounded elevations of the mucous coat with more or less constricted pedicles, and arranged in clusters—maintains that the minute structure of these formations is of subsidiary importance, that pathologically they are best considered as members of one group, and that clinically they have one common character, viz., that they are uniformly fatal, though death is chiefly, if not entirely, due to urinary obstruction and its backward effects upon the kidneys. The growths may extend in the substance of the mucous coat, into the muscular tissue of the vesical wall, as secondary deposits in the cellular tissue outside the wall of the bladder and as deposits in the neighbouring lymphatic glands. Other writers, as, for example, Dr. Vander Veer, classify the tumours which occur in children under the same headings as those of adults, but Mr. Targett has examined the subject so closely that his conclusions may be accepted as final. The only record of any innocent tumour is that described as a small papilloma which was

* ‘Transactions of the Pathological Society of London,’ vol. xlvii.

removed by Mr. Bryant in the eye of a catheter. Treatment must generally be limited to relieving the bladder of the confined urine either by a perineal or a suprapubic opening. But removal has more than once been successfully performed. Thus Professor Humphry removed by means of lateral cystotomy and with forceps and finger-nail a fibro-sarcoma from a boy, and a case of great interest occurred in the practice of Professor Billroth, where in a boy, aged 12 years, with frequent painful micturition, a tumour could be felt in the region of the bladder which was suspected to be connected with the back of the viscus. The lateral incision was made and a tumour of nearly the size of a fist, with an uneven surface, was found projecting from the posterior wall into the cavity of the bladder. It measured 8 inches in its longest diameter, 5 inches in its broadest, and 3 inches in basal circumference. Owing to its size it was found impossible to extract the tumour through the perineum. A suprapubic incision was then made, both recti were cut across and a transverse incision was carried into the bladder. The tumour was then torn through near its base with the finger and the pedicle dissected out. It appeared to take its origin from the muscular coat, and had not attacked the peritoneum. It is described as principally a myo-sarcoma and in some places a myocarcinoma. The boy was discharged in a month perfectly well. Clearly the only chance for surgical relief lies in an early diagnosis and a suprapubic incision when on inspection the possibility of removal can be considered and, if feasible, carried out in the same manner as tumours are removed from the bladders of adults.

A case in which retention of urine was occasioned in a girl, aged 2 years and 4 months, by a primary sarcoma of the vagina is related by Mr. D'Arcy Power.* The growths were of polypoid appearance and had been observed to project from the vulva five months previously. She died with symptoms of uræmia. The specimen is preserved in the Museum of St. Bartholomew's Hospital. The growths are classed as myxosarcoma, whilst some more dense were of the type of fibro-sarcoma. Mr. Power has collected a series of 26 cases, principally from German literature. Except from this cause retention of urine only occurs in children by reason of the pressure of an abscess in the perineum or the impaction of a stone in the urethra, which is at once readily

* 'Transactions of the Pathological Society of London,' vol. xlvii.

detected by the sound or catheter. If the stone is arrested in any part of the urethra anterior to the scrotum it can be extracted with suitable forceps or by means of an incision made directly upon it, but if it be further back it can generally be pushed into the bladder and can be removed later or at once by the lithotrite and evacuator. If, however, it remains obstinately lodged in the scrotal or perineal part of the urethra it is easily removed by a median incision.

EXTRAVASATION OF URINE.

The impaction of a calculus or the opening of an abscess into the urethra are the only causes which may give rise to extravasation of urine in young patients with the exception of rupture of the urethra by falls upon the perineum and the subsequent obstinate form of stricture which ensues upon that accident. The treatment of such injuries and their consequences in no wise differs from that followed in the case of adults, but considering the firmness of the cicatricial tissue which forms at the site of these lesions, the rapidity of its contraction and the speed with which destructive changes in the kidneys supervene and the fistulæ which form, it may sometimes be necessary to resort to some extreme measure in order to avert these after-consequences. Many operations have been devised for dealing with this obstinate form of stricture. John Hunter proposed to reach the rear of the constriction through the apex of the bladder with a metal instrument, to be met by another in front. Mr. Furneaux Jordan in his 'Surgical Injuries,' describes an operation through the rectum for the treatment of impassable stricture. In the 'Practitioner,' 1888, I related the case of a boy, aged 14 years, who a year after the operation for the re-establishment of the urethra, which had been divided by a fall, returned with the stricture firmly closed and with two sinuses in the perineum through which all urine was voided. The tissues of the perineum and scrotum were densely infiltrated. In order to reach the utmost limit of the sound urethra with the smallest possible wound I performed what is termed posterior catheterisation—that is to say, I opened the bladder above the pubes and passed a bent probe through the vesical orifice of the urethra down to the posterior surface of the stricture. Cutting down upon this I attached the mucous membrane of the urethra to the edges of the

incision. The result was most satisfactory. The sinuses closed, the perineum resumed its normal condition, and the boy passed his urine voluntarily at intervals of three hours. At the end of a year I inspected him and found him very greatly improved in health. The urine was voided from a nipple-like elevation close to the posterior edge of the scrotum. No irritability of the bladder existed, and the control over it was perfect. The urine, which previously to the operation contained pus and albumin, was perfectly normal, and the cicatrix of the abdominal wound was firm and level. So satisfactory was his condition that he and his parents declined any further surgical interference.

PHIMOSIS.

On the many baneful effects which result from an elongated or contracted prepuce I have no space to dilate, and can only allude to their effects upon the urinary apparatus. Reference has already been made to cases of hydronephrosis which are ascribed solely to this condition, and as a reflex effect may be mentioned nocturnal enuresis and daily incontinence and all the symptoms of calculus, including even hæmaturia. The hypertrophy of the bladder which ensues from this cause has been pointed out by Sir James Paget. The eczematous state which so often exists at the end of the prepuce frequently starts a slight urethritis in the region of the meatus by which urination is rendered painful and at the same time frequent, and which, if permanent, causes the meatus to contract and renders its division by the scalpel a necessity. For these and very many other reasons connected with the effects of this condition in youth and in later life, I consider that the simple operation of complete circumcision should be performed at an early age wherever complete retraction cannot easily be performed, and whenever the prepuce considerably overlaps the glands.

The urethra of girls is not often the site of any surgical affections, but a remarkable case is described by Mr. Davies-Colley,* in which the orifice of the ureter protruded through the meatus in a girl, aged 18 months. This protusion was ligatured, and after death the right kidney and ureter were found to be healthy, but the left kidney was suppurating and diseased by chronic

* 'Transactions of the Pathological Society of London,' vol. xxx.

obstruction. He considered that the condition was due either to the impaction of a calculus or to congenital constriction of the orifice of the ureter.

Mr. Croft has related a case of inversion of the bladder in a girl, aged 14 years. The bladder was turned inside out through the urethra and meatus. It was easily reduced under chloroform and did not recur. Similar cases have been reported by Dr. Lowe and Mr. Crosse, of Norwich, who by a timely recognition of the parts prevented their removal by the surgeon.

Mr. Bryant* describes a case of extreme prolapse of the female urethra occurring in a girl, aged 6 years. It was reduced and the child remained well. Several similar cases are mentioned. The prolapse seems to occur as the result of straining in the later years of childhood. It does not cause much trouble in micturition, but the protusion is tender and the mucous membrane often bleeds. All these conditions must be carefully diagnosed from urethral caruncle, which, common enough in women, is found occasionally to exist in children.

And now, Sir, time bids me conclude these somewhat scattered observations on some points of the subject which I set before myself. That I have by any means exhausted it I cannot pretend to hope; but that I have taxed, if not exhausted, the kind patience with which you and the Fellows of the Medical Society of London have been amiable enough to listen to what I found to say I greatly fear, and it remains only to thank you for your patience and to crave indulgence for the many omissions of which I am fully conscious.

* Transactions of the Royal Medical and Chirurgical Society, vol. lxxvii.

February 28th, 1898.

ABDOMINAL SECTION AS A MEDICAL MEASURE.

By FREDERICK TREVES, F.R.C.S.

I MIGHT be permitted, at the outset of this paper, to offer some explanation of its title. The President, when he did me the honour of asking me to read this communication, suggested that the subject should be "Abdominal Operations in Medical Cases." I was a little afraid to adopt this reading owing to some uncertainty as to what constituted a medical case. Surgery has of late years rather aggressively extended its boundaries, and the map of the human body, which was at one time precisely divided into medical and surgical territories—to the great advantage of medicine—has recently been much modified by the aggressions of the descendant of the barber. Although the surgeon is still in awe of the stethoscope his profane fingers have invaded the abdomen, the sacred thorax, and the brain. It is a question if even the pineal body, which as the reputed seat of the soul must be a purely medical district, is really immune from what is rather rudely called "surgical interference."

The difficulty of properly defining a medical case has therefore led to the present title. I may add in further explanation that I understand the President's wish to be that I should deal with such surgical measures in abdominal disease as appear to act upon the patient through other than accepted surgical lines; and, further, that attention should be drawn to matters incident to abdominal operations which are likely to be of interest to the physician. That a paper with such an object must be fragmentary and rambling is, I am afraid, inevitable.

The first cases to which I would direct attention are those in which the mere opening of the abdominal cavity appears to effect, in spite of all surgical prejudices, either the cure of the disease or at least its temporary amelioration. Prominent among these conditions stands tuberculous peritonitis. The results of the treatment of this disease by simple incision have been little short of miraculous. The large series of collected cases—that compiled by Aldibert—deals with 308 examples of this form of peritonitis

treated by operation, and shows a percentage of cures estimated at 69·8 per cent., of which number 33·4 per cent. may be regarded as complete recoveries. An examination of this record shows that the most favourable results on the whole have been those attending the mere opening of the abdomen. This practically applies to generalised peritonitis without suppuration, and to the non-suppurative encysted forms. In a certain series of instances the diagnosis has been made of an ovarian cyst or of some other such growth. The surgeon has proceeded to open the abdomen, to remove the hypothetical tumour; has discovered simply tuberculous peritonitis, has hastily closed the incision, and has therapeutically fled. In due course he has heard, to his amazement, that the patient has made an excellent recovery. In a certain number of the recorded operations the peritoneal cavity has been washed out or drained, or into the inflamed area has been introduced some such medicament as iodoform. In these instances some better result might be anticipated, inasmuch as the operation has been a little more full of purpose and more in accord with the surgical habit in dealing with inflammatory affections; but, strange as it may appear, these more elaborate measures have, except in suppurative cases, not been attended with such good results as have followed the mere incision made by mistake. Indeed, the incision made by mistake can claim some of the most brilliant achievements of surgery in connection with tuberculous peritonitis.

Some of the more extreme of the cases can excite nothing but amazement. Not long ago I was operating upon a cachectic patient—a young man—who was suffering from chronic perityphlitis. There was a strong suggestion of a tuberculous element in the case. I started with the intention of removing the vermiform appendix, but found that much-sought-after organ imbedded in a mass of adhesions which had implicated other viscera. Its removal would have involved an operation of considerable duration and difficulty. Moreover, the adjacent peritoneum, so far as the fingers could reach, was covered with advanced tuberculous deposits. It seemed utterly futile, in the face of this grave condition, to persist in the attempt to remove the appendix. The abdomen was therefore closed, and the patient's friends were told that the condition was beyond the reach of a reasonable operation. The man made a perfect

recovery; his abdominal symptoms vanished, and when I heard of him some months after, he had returned to his work as a shop assistant. How such operations act it is impossible to say. It is assumed by some that the beneficial effect is due to the admission of light into the abdomen. This is hard to believe, and it is possible that a satisfactory answer to the problem will be furnished when we know more of the degree and effect of intra-abdominal pressure.

As a further illustration of the unknown power of a simple abdominal incision, I might allude to a case of pylephlebitis which I reported some four years ago.*

The patient was a young girl, aged 15, who was recovering from a sharp attack of perityphlitis, the acute manifestations of which had practically subsided by the seventh day. On the eighth day she had a rigor, and the temperature rose from normal to 103°. From that time the temperature kept high, reaching 104·4°, and almost every day the patient had an exhausting rigor. There was great prostration, vomiting, delirium, enlargement of the liver, and pain over the hepatic region. The symptoms resembled those of abscess of the liver, and as the child was becoming steadily worse, I was asked to make an exploratory incision in search of pus. This I did on the thirty-first day of the disease. The liver was very much enlarged, and was remarkably soft to the touch—as soft almost as the lung. It was dotted all over with minute yellow specks, and presented the appearance met with in suppurative pylephlebitis. I considered the case quite hopeless, and closed the wound. The child never had another rigor, and made a rapid and perfect recovery. Yet she was so ill at the time of the operation that it seemed scarcely worth while to make even an exploratory incision. How this strange recovery is to be explained I am at a loss to say.

Another series of cases belonging to the present category is represented by those in which a mere incision into the peritoneal cavity has led to the rapid shrinking of certain malignant growths and to the temporary improvement of the patients. These cases must have come within the experience of all surgeons. In most instances a tumour of doubtful nature has been discovered, the abdomen has been opened, the growth has proved to be sarcoma, and nothing has been done. After the operation the mass has dwindled in size, and, in some recorded instances, seems to have vanished, certainly for a time. I have met with instances of this character in which sarcomatous tumours of the peritoneum or retro-peritoneal sarcomata have undergone most remarkable

* 'The Lancet,' March 17th, 1894, p. 662.

diminution in size. In one instance, in a young man of 25, a retro-peritoneal sarcoma the size of two fists became so reduced after a mere abdominal incision that it was scarcely to be felt, and some three months elapsed before the growth began to increase again. After this it rapidly led to the patient's death. In another example I some years ago performed laparotomy in a doubtful case of obstruction of the pylorus. A malignant growth of the pylorus was discovered. It was impossible to remove it—the operation of gastro-enterostomy had not then been perfected—and the abdomen was closed, the case being regarded as hopeless. The patient's symptoms vanished, the distension and sickness disappeared, his appetite returned, and he was actually able to return after a short period to his duties as a gate porter. It is needless to say that in due course the symptoms of the disease reasserted themselves and led to the patient's death.

Another series of cases in which relief unexpectedly follows abdominal section, with or without some further operative procedure, is illustrated by the large class of cases somewhat hopelessly styled nervous. These may be divided into two categories: those in which the symptoms of well-recognised diseases are imitated, and those in which the clinical phenomena are simply bizarre and fantastic. Of the former class of cases two examples may be given.

I was asked to operate upon a middle-aged lady, who had already had personal experience of surgery, and who for some 12 months had been invalided owing to an abdominal condition which was spoken of as "chronic perityphlitis." There was pain in the right iliac fossa, great difficulty with the bowels, occasional vomiting, and always very acute tenderness over the situation of the appendix. It is noteworthy that this tenderness was purely superficial, and appeared to be a matter of the skin. So intense was it, however, that no satisfactory examination of the right iliac fossa could be made. The patient's health was impaired by long confinement and by the constant use of hypnotics. So long as she remained motionless in bed no great trouble was complained of, but as soon as she attempted to get up, or even sit up, the pain returned in the same place. These symptoms were associated with phenomena of exhaustion, depression, and other expressions of the so-called neurotic state. All medical measures had failed, and it appeared that the only possibility of saving the patient from

a career of chronic invalidism lay in an abdominal exploration. She herself was convinced that she had a diseased appendix, and with the symptoms produced by that trouble she was remarkably familiar. I made an incision in the right iliac fossa and found nothing abnormal. I considered it discreet to remove the appendix for other than surgical reasons. This structure, when examined after removal, proved to be absolutely free from any suspicion of disease. The patient's symptoms all left her, she discontinued the use of hypnotics, her nervous troubles vanished, and she made a perfect recovery.

Another example of somewhat like character is afforded by a young lady, some 25 years of age. She also was familiar with the troubles incident to a diseased appendix. She suffered from extreme constipation, and the abdomen was constantly tympanitic. There was occasional vomiting and marked anorexia. So hypersensitive was the skin over the right iliac fossa that no detailed examination without an anæsthetic could be made. She appeared greatly prostrated, would lie for hours in a state of apparent stupor, and, at the time when I saw her, she had been confined to her bed for some months. Examination under an anæsthetic was consented to only on condition that any diseased organ discovered should there and then be dealt with. Under ether, examination of the right iliac fossa revealed nothing abnormal, but in face of the distressing and hopeless condition into which the patient had drifted, it was considered politic to make an exploratory incision. This was carried out in the right semilunar line. All the organs within reach were free of any traces of disease. It seemed desirable, or at least politic, for the same reasons which held good in the previous case, that the appendix should be removed. After removal, a minute examination revealed no disease in any part of it. The patient made a rapid and complete recovery, and lost all evidences of her long-continued nervous condition.

As an extreme instance of the second class of cases in which the symptoms conform to the manifestations of no known disease the following example may be given. The patient was a woman, aged 24, who was admitted into the London Hospital under my care on February 5th, 1897. The following was her somewhat exceptional history: She had been quite well until 12 months before admission. A year ago she had been seized with violent pain of a paroxysmal character in the left side of the abdomen.

This pain lasted some two or three hours, and came on, as a rule, twice a day. The bowels became very confined, and five months before admission she was seized with faecal vomiting. Previous to the onset of this vomiting no action of the bowels of any kind had taken place for four weeks. She was admitted into a metropolitan hospital, and the abdomen was opened. Nothing abnormal was found. For a week after the operation she was perfectly relieved of all her symptoms; at the end of that time the symptoms of intestinal obstruction, with faecal vomiting and rise of temperature, returned; it was then noticed that injections given by the rectum were returned almost immediately by the mouth. It was assumed that some fistulous communication existed between the stomach and the colon. A second abdominal section was therefore carried out; the stomach itself was opened; no kind of communication between it and the bowel was discovered, and both viscera were free of adhesions. As after her discharge from the hospital her symptoms of obstruction, with pain, fever, and vomiting, still continued, she sought admission into the London Hospital. Shortly after admission she exhibited definite hysterical attacks. She had, by some means, acquired the power of causing the mercury in the clinical thermometer to rise to the limits of the instrument. One medical man who had attended her wrote to say he had recorded a temperature of 110° . No action of the bowels could be obtained. She would howl with pain for hours. All food taken by the mouth was vomited; nutrient enemata were given by the rectum, but they also were vomited. A careful investigation of this vomiting of enemata was carried out by my house-surgeon, Dr. Sears, with the aid of the sister of the ward. An enema of castor oil was given; within ten minutes from the time of the introduction of this drug into the rectum the whole of the castor oil, as demonstrated by actual measurement, was vomited from the mouth, together with a small scybalous mass. A few days later, in order to further test this phenomenon, an enema of one pint of water stained a deep colour by methylene blue was injected into the rectum by the sister, in the presence of the house-surgeon. The whole of this enema, to the amount, that is, of one pint, was vomited by the mouth in ten minutes. I was extremely ill-disposed to carry out a third abdominal section. The only excuse for it was that, while at the previous operations the stomach had been carefully examined, an equally detailed

examination had not been made of the colon. As the patient resisted all forms of treatment, vomited all she took by the mouth, vomited nutrient enemata, and had no action of the bowels, and as she was becoming somewhat alarmingly feeble, I resolved once more to carry out an abdominal section as a forlorn hope. The abdomen was opened in the left semi-lunar line above the level of the umbilicus. The rectum and the whole length of the colon were examined with the greatest care and minuteness, and found to be absolutely normal. Some few adhesions existed around the scar of the wound in the stomach, but, with this exception, the abdominal cavity did not exhibit any trace of disease. The patient thought fit to be very ill after the operation; her respirations at one time reaching 140; she could not be induced to speak, and she went through all the popular phenomena of dying with startling effect. As these death-bed displays were not encouraged, she took finally to screaming, and became so intolerable in the ward that she was removed to an isolated room. The absence of an appreciative audience appeared to have an immediate effect upon her symptoms, for she soon ceased to complain, the bowels acted without difficulty, the vomiting ceased, the temperature remained normal, and before she left the hospital on March 19th she may be said to have been perfectly restored to health. The highest temperature she was able to develop while in the hospital was 109°. She had stated that she could produce this heroic fever by very slowly squeezing the bulb of the thermometer between her teeth. An attempt to produce this elevation of the mercury by the means indicated only led, however, to the destruction of two thermometers.

Beyond cases so extreme as this there are many others in which the patients suffer great distress, in which it is impossible to give any name to the disease, or to offer any explanation of the symptoms. That a great many of these cases are relieved and, indeed, cured by abdominal section after all medical measures have failed must have been demonstrated by many. One lady, 27 years of age, who had for long exhibited symptoms of terrible abdominal pain, with constipation, vomiting, anorexia, and exquisite tenderness of a certain part of the abdomen, came under my notice when in a state of extreme exhaustion. No measures that had been devised had had any effect upon her symptoms. I somewhat reluctantly consented to make an exploratory incision,

and made it over the seat of the pain—namely, just to the left of the umbilicus; nothing abnormal was discovered. The symptoms were in no way relieved by the operation. The patient declined all food, and vomited such as was introduced into the stomach by force. Nutrient enemata soon returned; pain was stated to be as intense as ever, and within a week or so of the performance of the operation the patient died. *Post-mortem* examination revealed no trace of disease in any part of the abdominal cavity. In such an example as this it would appear that the disease is a disease of the nervous system or a disorder of the mind, and that the abdominal symptoms are no more substantial than are the ghosts which take part in the hallucinations of the insane.

There is a somewhat more definite form of abdominal trouble that may, I imagine, lay claim to the term “intestinal hypochondriasis.” Many of the patients who are the victims of this condition are men—mostly men of middle age. Nearly all, if not all, have been the subjects of chronic colitis. They are apt to complain of fixed pain and tenderness at a spot a little below and to the left of the umbilicus. The spot indicated would be not far removed from the inferior mesenteric vessels and plexus. These patients suffer from troublesome constipation, from dyspeptic troubles, from sickening pain in the abdomen, and from infinite depression. Their whole mind is engrossed by the consideration of their bowels, and the contemplation of the concerns of their abdomens. They give elaborate accounts of the intestinal symptoms, and are prone to attempt to demonstrate that there is a narrowing of the bowel at the seat of the pain. In two instances which have come under my notice the patients were retired medical men, both of whom had had colitis, and no arguments that I could use could induce them to give up the idea that there was an actual stricture of the bowel just to the left of the umbilicus. In all these patients it is common to be able to feel through the parietes a contracted sigmoid flexure. There is no doubt, from the study of these and of similar cases, that the sigmoid flexure is a very irritable part of the alimentary canal. I have felt this portion of the bowel to contract under the fingers until it feels like a firm cord, about the width of a man’s thumb. It is possible that, in these cases, long continued catarrh has led to a permanent state of irritability of the muscle forming the

bowel wall, to a condition of abiding spasm, which may well cause pain and the sensations of obstruction.

As an illustration of this subject I may mention such a case as the following :—A patient, 50 years of age, had had so long as he could remember, a somewhat irritable condition of the colon. It had always been his habit to have an action of the bowels two or three times every day. After a while this condition was replaced by constipation, or at least by an indisposition for the intestines to act. Any action of the bowels was preceded by troublesome tenesmus and a sense of difficulty in emptying the rectum; much mucus was passed. Enemata acted better than aperients. Examination of the rectum revealed nothing abnormal. Through the abdominal parietes could be felt some 4 inches of the rigidly-contracted sigmoid flexure. It seemed as if the long overstimulated bowel had at last passed into a condition of tonic spasm, spasm of such a degree that it scarcely admitted the contents of the bowel to pass along it. That such an interpretation is probable was shown by the fact that on more than one occasion, in spite of the reputed constipation, quantities of fluid could be found to be present in the upper region of the bowel. This contraction of the sigmoid flexure may explain the tenesmus, the perpetual sense of uneasiness in the lower part of the bowel, the idea of cramp and of some obstacle to the passage of the contents of the gut, the impression that something has to come away. Certain of these cases are conspicuously relieved by opium, the opium acting distinctly as an aperient. Indeed, I should think they afford one of the best examples of the conditions under which opium has the effect of an aperient.

To leave these cases and to deal with others of a different character, it may be interesting to state the anatomical conditions which I have found in cases of obstinate constipation in which the abdomen has been opened. In certain of these cases the operation has been performed on account of constipation only, but in other instances the constipation has been merely a circumstance associated with other and more pressing disorders. It must be allowed that an operation for the relief of simple constipation, no matter how obstinate, is somewhat of a reflection upon the possibilities of medical treatment. The cases, however, in which surgical interference is necessary are certainly exceedingly few. They are represented by instances in which all ordinary measures to secure

an action of the bowels seem destined to fail. Aperients of all kinds, in all doses, produce little effect beyond abdominal pain. Enemata of various sorts, administered in various positions, have uncertain results. The patient has become lethargic, despondent, and dyspeptic, and is the subject of a depressing series of nervous phenomena. His life centres around the inactive intestine; an anxious and intense importance attaches to the evacuation of the alimentary canal, and this simple physiological act becomes indued with extravagant responsibilities. It may be assumed that massage has been tried, that electricity has been made use of, that digestive remedies of all sorts have been employed, that every phase of diet has been tried, and that the patient has had resort to one or other of the many spas which have a reputation in connection with the cure of this disorder. After many months, or possibly years, of futile medical treatment, the patient's condition seems to his mind to be so hopeless, so utterly depressing, that the mere opening of the abdomen by an exploratory incision appears to him to be a measure not only of little moment, but one which he may heartily welcome. In certain of these cases I have found an exceptionally long sigmoid flexure, conforming more or less to the outline of a gigantic omega, lying helpless, ponderous, and inert in the hollow of the pelvis. It would seem in such cases as if the power of the patient's abdominal nervous system were insufficient to unfold this listless coil. Now and then the condition is aggravated by adhesions, or possibly by the pressure of a pelvic tumour. In other examples the transverse colon appears to be mainly in fault—it is unduly long, it is loaded, and is bent in the form of the letter V, so that its central portion reaches to the pelvic brim, or even enters into that cavity.

In another set of examples the sigmoid flexure is unduly short, and appears bound down to the margin of the pelvis. One can imagine that its very fixity encourages feebleness in its muscular tunic. Not infrequently one finds the peritoneum which forms the sigmoid meso-colon dense, thickened, and opaque. The cause of this condition of the serous membranes is hard to seek. Now and then the state of the membrane is such as to merit the term "peritonitis deformans," although independently of tuberculous gland disease this form of peritonitis has but a doubtful existence, and the condition which I have alluded to has, in my experience, been met with only in connection with the sigmoid flexure.

In more than one case of quite intractable constipation I have found the meso-colon throughout its entire length so enormously distended with fat that it was easy to imagine that the movement of a peristaltic wave along the bowel could be a matter of some difficulty. This development of fat is quite striking. It may or may not be associated with a like fatty deposit in the mesentery and omentum, and it may be found in patients who can in no sense be considered corpulent, and indeed in some who may be classified as thin. Finally, one has met with examples in which no explanation can be afforded other than that of atony, or general disorder in the action of the muscular apparatus of the bowel. The thin-walled bowel is distended with gas, or there is dilatation of the gut in one place and contraction in another.

As a matter which is incidentally connected with constipation, or at least with disturbance of the colon, I may mention a form of pelvic peritonitis, or more probably of pelvic cellulitis, which is very apt to give rise to difficulties of diagnosis. In connection with such cases it is necessary to point out that inflammatory conditions of the intestinal wall may be transmitted to the tissues beyond the limits of the gut. Our knowledge of ulcerative processes in the colon, although much extended in recent years, is as yet by no means complete. Perforating ulcers may occur in the colon with very little, if any, antecedent suggestion of intestinal trouble. This fact is illustrated by cases (by no means common) in which a communication has been formed between the colon and the bladder. Contrary to what may be expected, the cases in which such communications exist are not usually examples of malignant disease. In the great majority, indeed, of these recorded instances the absence of carcinoma has been demonstrated. If the ulcer of the colon can so spread beyond the bowel wall as to form a fistulous communication with the bladder, it is no matter of surprise if one finds instances in the tissues beyond the affected intestine. In illustration of this condition I may cite the two following cases—one to illustrate an acute process, the other a chronic one:—

The first case was that of a man of 48, who was much over-worked, and often exposed to all kinds of weather. After a severe chill he developed symptoms of acute enteritis. These symptoms, after lasting for some little time, were followed by severe pain in the perineum and rectum. There was discomfort which took the form of a feeling as of a foreign body in the bowel which could not pass. The bowels

became irregular and constipated, and much mucus was passed. There was loss of flesh. A rectal examination made some time after the advent of these symptoms revealed a solid mass in the pelvis, which appeared to occupy the whole of that cavity. It seemed, indeed, as if some firm material like wax had been poured into the pelvic basin. As the patient was weak, anæmic, and wasted, it is no matter of surprise that the diagnosis of pelvic sarcoma suggested itself. The trouble in the rectum was long abiding. As soon as the swelling began to disappear it was evident that the trouble had taken the form of what was probably a pure pelvic cellulitis.

In the other instance the patient was a man, aged 70, with an enlarged prostate and its concomitant troubles. He was the victim of troublesome constipation, which he to some extent neglected. Now and then he suffered from a form of spurious diarrhœa. After one such attack he became conscious of increasing trouble about the rectum, much pain was felt in the gluteal regions and about the outlet of the pelvis. There was some fever; there was great prostration; and after many days some wasting. A rectal examination revealed a solid mass, which, like the mass in the previous case, had no precise limits, and appeared to occupy the pelvic cavity. I ventured to diagnose sarcoma of the pelvis. This diagnosis was confirmed by an eminent London surgeon; an unfavourable prognosis was given, and colotomy was discussed. Time went by, and the symptoms, instead of increasing, diminished; the swelling became less, and in the course of months it entirely vanished. Several years have elapsed since this case came under my notice, and I am glad to say that the patient, in spite of his advanced years, is still hearty and well.

Cases such as these make one a little suspicious of the diagnosis of "sarcoma of the pelvis" when the patients are men past middle age. I have met with no example of this condition, nor have I heard of one, in a female subject.

Another point of interest which surgery has helped to elucidate within recent years has been the subject of so-called "idiopathic dilatation" of the hollow viscera. Any part of the alimentary canal, from the stomach to the rectum, may be the seat of a form of dilatation which may possibly merit the term "idiopathic." This term carries with it an important significance, because it was at one time assumed that dilatation of any part of the alimentary canal was dependent upon some obstruction in its lumen, and that above this obstruction distension took place. It was considered that dilatation of the stomach, for instance, more or less definitely implied some obstruction, possibly of a temporary character, at the pylorus, and that marked dilatation of the bowel involved some stenosis or occlusion of the tube beyond the distended portion. It has now been fully demonstrated that distension of the stomach or intestine, attaining even to an extreme degree,

may be met with independently of any obstruction to the lumen of the adjacent portion of the canal. Obstruction in the lumen of the intestine is, indeed, not the most ready means of inducing meteorism. Interference with the innervation and blood supply of the bowel wall will cause a much more speedy tympanites. In animals the ligaturing of the main mesenteric vein is followed by quite intense meteorism, and one of the most extreme examples I have seen of tympanites of the small intestine in the human subject was due to thrombosis of the superior mesenteric vein. One of the most interesting examples of idiopathic dilatation is provided by the condition known as "ballooning of the rectum." Here, on introducing a finger into the anus, the rectum is found to be apparently dilated to its utmost. It may be dilated in the same way as one speaks of the iris as dilated, but it is certainly not distended, and the term "ballooning," which suggests extreme inflation with gas, is entirely misleading. The ballooned rectum is not distended with gas, but its condition is due to some phase of paralysis. If two fingers be introduced into such a rectum so as to allow gas to escape, the ballooning remains the same. It is the muscular wall of the gut which is at fault, and not its contents. On the other hand, if the patient be anæsthetised the ballooning vanishes. Idiopathic dilatation of the colon is well seen in what may be termed masked peritonitis. Indeed, a little inflammatory focus within the abdomen, and without the pelvis, is a common cause of persisting dilatation of the bowel. As an example of masked peritonitis, I may take such a case as the following:—

An abdominal section—such as the removing of a diseased vermiform appendix—is performed. For a day or two all goes well, and then appear the phenomena of masked peritonitis. There is great distension of the epigastric region due apparently to dilatation of the transverse colon. The patient is very frequently sick, and can retain little or nothing in the stomach. He has obstinate and often most persistent hiccough. There is no pain, or next to none, no tenderness of the abdomen, and no board-like hardness of the abdominal muscles. The abdomen may be perfectly soft in all parts, there is no rise of temperature, the bowels respond to enemata, and to such an aperient as calomel; but the dilatation of the colon, the irritability of the stomach, and possibly the hiccough persists. After the bowels

have acted there is some little diminution in the epigastric distension, but it is only temporary. The symptoms may last for many anxious days, and at last end in recovery. It may be mentioned that in this condition no drug answers so well as strychnine administered hypodermically.

As regards the stomach, it is needless to say that certain forms of dilatation of that organ are described in which there is no evidence of any obstruction of the pylorus. There is a good deal to suggest that some forms of rapid dilatation of the stomach may depend upon nerve influences which have their starting point in some infective or inflammatory process within the abdomen. I have seen acute dilatation of the stomach follow upon severe and extensive contusion of the abdomen, from which patient ultimately recovered, and in which there was no evidence that there was at any time obstruction of the pylorus.

An interesting example of non-obstructive dilatation of the stomach is afforded occasionally by gastrostomy. In this operation the stomach is fixed to the abdominal wall and opened. Nevertheless, now and then after this procedure I have found the stomach, not contracted as it might be supposed to be, but dilated, and I have seen this dilatation very marked in spite of the fact of there being a free opening leading into the gastric cavity. When, however, one comes to consider the cases of "idiopathic dilatation of the colon," which have of recent years crept into medical literature, it is a question whether the majority can be ranked with the cases just enumerated—cases in which the dilatation is due to no mechanical cause, but rather to changes in the innervation and blood supply of the viscus. In these reputed cases of idiopathic dilatation of the colon there are certain common phenomena. The distension of the colon, and especially of the lower part of it, is simply enormous; it may be so great as to lead to shortness of breath, palpitation of the heart, oedema of the legs, and albuminuria. There is marked constipation, usually vomiting, and often hiccough. In one series the patients are adults, mostly males, and are over 50 years of age. In the other series of cases the patients are children, and symptoms of abdominal trouble have been more or less apparent from birth. In a recent paper* on this subject I have ventured to raise the question whether these cases in children, or at least the majority

* "Idiopathic Dilatation of the Colon," 'The Lancet,' January 29th, 1898.

of them, justify the name "idiopathic." I have brought forward evidence which makes it probable that in no small proportion of these cases the dilatation is not "idiopathic," but is dependent upon some congenital defect in the lower part of the intestine. I have illustrated this by the following case:—

A little girl, aged 5 years and 9 months, almost from her birth had suffered from extreme constipation, followed by enormous distension of the abdomen. The case, in its clinical features, exactly coincided in all points with the reported cases of idiopathic dilatation of the colon. In this particular instance no treatment that was devised was other than imperfectly successful. When the child came under my notice the abdomen could only be described as enormous. As I knew that in all the reported cases of this type death had followed, excepting in one in which an artificial anus had been made, I resolved to attempt a radical cure. The details of this measure I have described in the paper alluded to. Suffice it to say that I found a congenital narrowing of the rectum and sigmoid flexure, and an enormous dilatation of the descending colon above it. I excised the anus, the entire rectum, the entire sigmoid flexure, and the descending colon, and I brought the transverse colon through the hole in the perineum, to the margins of which I attached it. The child made a perfect and uneventful recovery. To this case certainly the term "idiopathic" was not applicable.

Time will not permit of the discussion, even in a fragmentary manner, of certain points which are of medical interest in connection with the stomach and pancreas. The excellent work of Mr. Mayo Robson has, for a time at least, exhausted the subject of the surgery of the liver and bile ducts. I will only venture to add a brief account of three cases which bear upon peculiarities in the anatomy of the liver. One cannot fail to be struck with the fact, when operating upon the liver, that in adult female patients that organ often occupies a much lower level than is usually ascribed to it. In the two following examples a normal liver was mistaken for a tumour in the lumbar region:—

The first patient was a woman, about 30 years of age, who had developed a localised peritonitis beneath the liver—a perihepatitis. The cause of this was never made evident, but it is not improbable that it had its starting point in the colon. After all the inflammatory symptoms had subsided there remained an indefinite lump beneath the liver and between the last rib and the iliac crest. The patient was still confined to bed and still complained of much pain in the lumbar region. Her temperature was not quite normal, but the persistence of pain and of a certain amount of tenderness, together with the continued illness of the patient, suggested the presence of pus. I opened the abdomen in the right semilunar line, and found that the gall bladder was free from adhesions and contained no gall stones. Below the region of the gall bladder was a confused mass of adhesions, among which was found the

hepatic flexure, which was with some difficulty separated from the liver. In front of the vaguely defined kidney was a well-rounded mass covered by adhesions and bound firmly to the lateral and posterior parietes of the abdomen. It could not be separated from the liver, but, as it reached almost to the iliac crest, I did not for a moment suppose that it was hepatic structure. I imagined it to be the wall of an abscess, and after having failed, owing to the adhesions, to identify its deeper connections, I made a small incision into it. I immediately found that I was cutting into normal liver tissue. It then became apparent that the extreme right side of the right lobe of the liver extended downwards almost to the iliac crest; it was buried in adhesions, and, as the incision showed, was of normal texture. It had a close resemblance to the "linguiform process" described by Dr. Hellier, Mr. Mayo Robson, and Professor Riedel. Most of those who have written upon the subject of "Riedel's lobe," as it is called, have assumed that this condition is due to gall stones; but in this case, and in one quoted by Mr. M. Robson, such association did not exist.

The second case was that of a woman past middle life, who complained of vague but troublesome pain over the region of the right kidney. She had never had hepatic colic nor jaundice; she, however, volunteered the statement that she had vomited gall stones. Between the liver region and the iliac crest was a well-rounded mass; this mass moved on inspiration; it could be pushed forwards, but no pressure from the front could make it sink back into the renal fossa. It was not dull on percussion from the front. The case was considered to be one of movable kidney, and I had been requested to suture the floating organ. On the examination I made previous to the operation, I felt so very nearly assured that the tumour was not renal that I made an incision in the right semilunar line, some little way below the ribs. I discovered then that the tumour was made up of Riedel's lobe, that it was perfectly normal and quite free from adhesions. It reached well into the right iliac fossa. It formed so definite and remarkable a projection that at first sight it was difficult to believe that it belonged to the liver. The gall bladder contained many small stones, which I removed; the opening in the gall bladder was sutured and the abdominal wound closed. Both this patient and the one already described made perfect recoveries. They were both patients in the London Hospital within the last few months.

The third case is a little more remarkable. The patient was a young lady, aged 19, whom I saw in consultation with Mr. Alfred Cooper and Dr. Cornish. Since the age of 2 years her symptoms were such as to make it evident that no bile passed into the intestines. Since the time mentioned, that is for 17 years, she had been deeply jaundiced; so stained was the skin that it was hardly possible to believe that the patient was a European. The motions had always been white; the urine was a deep mahogany colour; vomiting was frequent; bleeding from the gums and nose was of almost daily occurrence, and the patient was liable to attacks of fever in which the temperature ran up to 102° to 104°. The urine was often offensive, and she had only menstruated twice. There was chronic dyspepsia and abiding malaise. Dr. Lauder Brunton, who saw the patient, considered the case to be one of stenosis of the bile ducts, probably of congenital origin. The liver was no longer enlarged, but it had been enlarged when the patient was 10 years old. Her condition was deplorable, and it was the opinion of those under whose care she was that unless some relief could be obtained, her life could not be long extended. From a surgical point of view there was little to

encourage an operation upon a patient who had had persistent jaundice for 17 years, and who suffered from hæmorrhage from the gums and nose. The desperate state of the patient, however, appeared to me at least to justify an exploratory incision. I opened the abdomen, and was pleased to find a gall bladder, the size of a hen's egg, filled with clear mucus. A probe could be made to enter the cystic duct, and pass a little way into the common duct. About a quarter of an inch from the commencement of the common duct that tube ended in a firm, fibrous nodule, and beyond this nodule no trace of the duct could be discovered; there was, in fact, an absence of the terminal part of the duct. I established a communication between the gall bladder and the jejunum. The operation was performed on the 9th of this month, and so far the patient's recovery has been uneventful. For the first time in 17 years bile-stained motions have been passed, and it is evident from the marked improvement shown in all the symptoms that the bile has at last a free means of escaping into the small intestine. I have no means of explaining how it happened that for the first two years of the patient's life, assuming the trouble to be congenital, there was no jaundice. This instance serves to illustrate that even the most unpromising of cases may prove to be worth an exploratory incision.

In conclusion, I cannot avoid one word on the subject of this self-same exploratory incision. That this simple procedure has been of enormous value no one will doubt; that it has been the means of saving many a life has been amply demonstrated; that it has enabled a correct diagnosis to be made and a logical treatment to be carried out in hundreds of obscure cases needs not to be insisted on; but there must arise in the minds of many the question whether the exploratory incision, infinite as its value may be, is an entirely unmingled blessing. I notice that there are indications which tend to allow this ready measure to replace the admirable labour of clinical observation. The incision is so simple, the collecting and arranging and judging of clinical evidence is so difficult and tedious. With a scalpel in the hand, the patient, searching examination of the abdomen as practised in older days is no longer needed, and it is a question whether the education of those who wish to become acute clinical observers has not suffered a little thereby.

Dr. LAUDER BRUNTON observed that the account which the author had given of the advantages of opening the abdomen in cases of tuberculosis of the peritoneum was very encouraging. He was not quite sure that the author might not have pushed his statement further in view of the fact that patients with pulmonary tuberculosis often derived much benefit from the abdomen being opened. He remembered a case which had struck him very much at the time, not merely with regard to the advantage of the operation in the abdominal condition, but also in regard to the condition of the lungs in a phthisical patient. A lady whom he had seen several years before suffered from great pain in the right iliac fossa.

He had diagnosed appendicitis, but she recovered from this, though she remained liable to occasional attacks of pain for a year or two. At about this time the lungs became affected with tuberculosis, and ultimately a large cavity formed in the left lung. Shortly after this, when she was in such a condition of phthisis that one was looking forward to her death, she got an idea into her head that she must have her abdomen opened for the pains in the ilica fossa; in fact, her friends had mentioned to her that opening the abdomen in such cases was often productive of benefit. He himself was opposed to any operation of the kind, but she insisted and carried the point. When the abdomen was opened they found very much the condition he had anticipated, viz., much tuberculous hardening and infiltration, and the peritoneum was studded with tubercles. There was nothing to be done but to sew up the wound, and she made a good recovery. Not only, however, did the iliac pain not recur but the pulmonary condition was markedly improved, and the patient had since regained and retained a pretty fair condition of health. It was difficult to suggest any explanation of such a case. The only one that occurred to him was that possibly by the admission of air into the abdomen some albuminous substances present in the abdominal cavity might undergo such change as to become antitoxins, in such wise as to lead to the formation of a true tuberculous antitoxin on a large scale which put a stop to the tubercular process. He suggested that it was just possible that abdominal surgery might yet be extended to the cure of phthisis, and in the cases where no disease was to be found in the abdomen they might yet come to open it with the idea of benefiting the lungs. That might seem a far-fetched hypothesis, but the advance of surgery had been so great that one hardly knew where to draw the line between the possible and the probable, any more than one could draw the line at present between surgery and medicine. Another remarkable condition which attracted much attention because of its very troublesome nature was abdominal pain, especially pains that occurred in certain patients early in the morning, about 3 or 4 a.m. This pain often occurred in gouty patients and proved very refractory to treatment. Not unfrequently they occurred in the left iliac fossa, and one might suspect adhesions about the sigmoid flexure. He referred to the case of a medical man who had been the victim of pain of this kind for some time. He ultimately determined to have the abdomen opened, when adhesions were found, but chiefly on the right side. He had since remained free from the pain consequent on the adhesions having broken down, but it was too recent a case for one to arrive at any positive conclusion in respect thereto.

MR. T. BRYANT admitted that many of the cases alluded to by the author were cases with respect to which he was in a great measure very ignorant. While listening to the paper he was reminded of the time when he used to give a lecture twice a year on his mistakes, in order that he himself with others might learn something from them. Many of the cases mentioned by the author were cases which doubtless the surgeon himself probably looked upon as mistakes, *i.e.*, as not supporting the views he entertained on commencing to operate, though great good followed. This encouraged him to refer to some mistakes which he had made in years gone by at a time when ovariectomy was in its infancy. He had been asked on one occasion by an obstetric physician to operate on a case of unquestionable ovarian disease. Not having had much experience at that time of the diagnosis of these cases he acceded to the

request but he found no ovarian disease at all, but only a quantity of ascitic fluid which escaped through the incision. The wound was sewn up and the patient recovered, but at the time he felt very humiliated at having performed such an operation without himself confirming the diagnosis. The lesson, however, had not been thrown away upon him. Within a couple of years he had been asked by another physician-accoucheur to see a case of unquestionable ovarian disease in a youngish woman. He was asked to explore with a view to the removal of the ovary, but when he came down on the peritoneum, or what he took to be the peritoneum, he was confronted by the difficulty that it could not be dissected off the subjacent tissues. The accoucheur assured him that he had not reached the peritoneum, so he went deeper and came upon something which looked very much like intestine. Again the accoucheur insisted that it was not intestine but the cyst, so he cut into it and opened the intestine. He was quite unable to make out any peritoneal cavity, for practically there was no such cavity. Here and there there was a small cavity containing fluid, but that was all, so he stitched up the wound and made the best of a bad job. The patient steadily improved, and 18 months after the operation she was comparatively well. With respect to the nervous cases, cases of imaginary trouble, he would not go so far as to say that the author was wrong in performing such operations, though, of course, such cases required very great care and the caution of the Scotchman, who thinks thrice before he acts, not to be impulsive and not to make too many exploratory operations. He felt, with the author, that the success of these operations must have some influence in urging on that desire to perform operations which was not to be approved or encouraged. They ought to be very careful as to the conditions under which they resorted thereto, otherwise they and other operations might risk being brought into discredit. He commented on the interest of the author's remarks in respect of dilated and misplaced colon. They were probably all familiar pathologically with that condition. He would have been glad if the author had given some kind of help in regard to the diagnosis of these cases. The cases of contracted colon after colitis belonged also to a group of their own, and he concurred in the author's view as to their causation. The author, moreover, had given them a useful hint in explanation of the occasional purgative action of opium.

Dr. FRED. J. SMITH referred to that class of abdominal cases in which the peritoneum contained a large amount of ascitic fluid, and asked Mr. Treves whether, in his opinion, such cases were best treated by surgical incision or by paracentesis with trocar and cannula, when the usual medical measures and drugs had failed to remove the fluid. Personally, Dr. Smith preferred the incision on the following grounds:—(1) It was safer, as there was practically no death rate after a *simple* incision; he could not say he had seen a death *from* paracentesis, but he had certainly seen many *after* that procedure with peritonitis distinctly present. (2) It was more scientific, for paracentesis was a plunge in the dark and that, too, of a dangerously sharp weapon, while the incision was made with every care to prevent wound of the intestine. (3) It cleared up in the most positive way cases of doubtful diagnosis, for the cause of the ascites was brought within the reach of both finger and eye, one or both of which would surely recognise it; on this point Mr. Treves had suggested that the ease and simplicity of this operation had led to some laxity and carelessness in diagnosis and loss of that *tactus eruditus*

which was so valuable, but even here Dr. Smith thought that the profession's loss might be the patient's gain. (4) If the cause of the ascites were removable it could be removed at the time of the incision; such removal, of course, made the operation more formidable, but that was not the fault of the incision. (5) By an incision the patient was given that chance of the morbid condition disappearing, whatever its nature, which experience has shown was a very real chance in some cases. Dr. Smith confessed he could offer no explanation of this influence of an incision, but said he had read a suggestive theory of antitoxins being oxidised toxins, and the admission of oxygen to the peritoneum might be useful if this theory were true. He admitted, on the other hand, that incision had some drawbacks:—(1) It necessitated the assistance of a surgical colleague, which might in private practice be difficult to obtain; (2) it could not be or probably would not be repeated time after time if the abdomen kept on refilling; (3) it involved general anæsthesia; (4) it also demanded rigorous asepticism, at least for the wound. He here mentioned a case in which he had performed paracentesis on a woman who was very much distressed by ascites due to cardiac failure. On withdrawing the cannula he was startled to find that the opening would not close and that the abdomen kept on leaking; nothing, however, could be done, the leakage went on for some days and the patient steadily improved without any untoward incident. Dr. Smith thought that these objections were all trivial compared with the advantages. Referring to other points in Mr. Treves's paper, he said that his own extensive experience in the *post-mortem* room had shown him that there was no organ which varied so much in position as the appendix. Probably the most common position was that in which the appendix was tucked up behind the ascending colon or touching the right ovary. He added that he had seen a well marked case of fæcal vomiting, the patient having vomited a solid mass of fæcal matter 4 inches in length. *Post mortem* it proved to be due to a gastro-colic fistula from carcinomatous ulceration.

Mr. ALBAN DORAN related a case which occurred 10 years ago of undoubted fæcal vomiting in a vigorous youth. This youth had eaten 24 walnuts at a meal, and next day ate cold mackerel for supper. The three other persons who partook of the latter meal were seized with symptoms of irritant poisoning. They, however, recovered, but the patient developed intense pain with induration in the right iliac region. Sir Thomas Smith and Dr. Andrew had been called in and agreed that it was probably a case of acute perityphlitis. The patient vomited fæcal matter freely for three days, then flatus passed and he slowly convalesced. He had since been quite free from any return of the symptoms. In this case there was not only obstruction but also acute irritation, and perhaps the two conditions might imply something which produced the fæcal vomiting. In regard to the case mentioned by Mr. Bryant and another referred to by the author, he suspected that they were simply instances of old tuberculous peritonitis or possibly a cyst of the urachus.

Mr. TREVES, in reply to Dr. Smith's question, said that he thought much good had followed the practice at the London Hospital in cases of ascites of doubtful origin of evacuating the fluid by incision. It had facilitated the diagnosis of many obscure cases in which tapping would have afforded little, if any, assistance. He said that of course he had seen cases of genuine fæcal vomiting, but he wished to protest against the indiscriminate use of the term in almost every reported case of intestinal obstruction. Fæcal vomiting must be looked upon as a very

rare thing. In one such case he had been shown what was said to be a scybalous mass, which turned out to be a lump of coagulated milk such as one often met with in the intestine. These masses certainly looked very much like faecal matter, but they were not masses that had reached the colon. He concluded by alluding to a well-known case in which the patient, who had developed many curious symptoms, had ultimately passed one of these lumps which proved to be a hard mass of caseine, produced as described.

March 14th, 1898.

ON GASTRIC ULCER.

By SEYMOUR TAYLOR, M.D., M.R.C.P.

MR. PRESIDENT AND GENTLEMEN,—In reply to an invitation from our Senior Honorary Secretary to read a paper before this Society, I expressed a willingness to give some of my views on the subject of Gastric Ulcer, inasmuch as for some number of years a large out-patient experience has brought many cases before my knowledge, inasmuch as I have made in my note-books many speculations as to the origin of the disease, and inasmuch as I feel that we are by no means possessed of exact knowledge of its pathology.

Now, the following remarks and speculations which I desire to bring before the Society are restricted to the innocent or benign varieties of gastric ulcer. The form of ulceration which is dependent on, and caused by, the breaking down of malignant neoplasms is altogether outside the subject of my paper. It perhaps may be as well to refresh one's topographical anatomy of the human stomach, as an accurate knowledge thereof may prevent some confusion of signs and symptoms.

The entrance of the œsophagus into the cardiac end of the stomach is at, and only a little to the left of, the ninth dorsal vertebra. The stomach does not, as many would suppose, lie transversely across the epigastrium. Strange as it may seem to some of you, the organ lies nearly vertical in the belly cavity. In other words, the so-called upper curve should be called the right or lesser curve, although it is actually to the left of the mid line of the body, whilst the lower or greater curve is, of course, to the left. Quite seven-eighths of the organ are situated to the

left of the median line. The dome of the cardiac end rises quite an inch (sometimes more) above the level of the cardiac orifice.

The pylorus itself is only about 1 inch to the right of the median line, and looks backwards and downwards, not directly to the right, as many imagine. The pylorus is not a valve, it is sphincter only. This is proved by the possibility, in severe vomiting, of the duodenum and intestine beyond emptying their contents through the stomach. The aperture of the pylorus will only admit one's little finger. It is important to remember this, since in malignant and other diseases involving the pylorus there may be urgent vomiting which suggests actual or partial occlusion, whilst the orifice may be even larger than normal. Vomiting in many such cases is due to destruction of muscular fibres at the pylorus preventing the contents of the stomach being carried through the gateway. The epithelium of the stomach aspect of the pylorus is as that of the stomach, whilst that of the duodenal aspect is as that of the duodenum.

There are two recognised varieties of innocent ulcer of the stomach: (i) the spreading, smouldering, or, as some authors have it, the chronic ulcer; and (ii) the perforating or acute ulcer. Most authorities appear to agree that both varieties are caused by the same pathological process, whatever that may be; in other words, that chronic ulcer is a condition merely subsequent to, or consequent on, an acute ulcer. But my endeavour will be to show that they are distinct diseases: distinct in their ætiology and in their pathology.

Firstly, then, as regards the Chronic Ulcer. On this subject I must be brief, as it is one which has not engaged my mind so much as the acute variety. The ulcer in a great majority of cases appears to affect males. My figures show 72 per cent. It is certainly, as compared with the perforating ulcer, a disease which attacks people who have arrived at, or passed, the meridian of life, *i.e.*, subjects between 45 and 60 years of age. Then as regards occupation and social rank I have nothing conclusive to tell you. Obviously the records derived from *post-mortem* observations are most frequently obtained in hospitals. Hence one would assume that the chronic ulcer was a disease almost special to the lower ranks of society. But I very much question whether this be so. The impression on my mind, derived from cases seen in private practice, is that this chronic or, as I prefer to call it,

spreading ulceration attacks by preference a class not necessarily affluent, but well-to-do—a class who, whilst busy, excited, and perhaps anxious about mundane affairs, has the means to indulge in large table extravagances, and yet who frequently, by stress of occupation, lead lives in which irregular and improper meals are frequent. Hence we find the condition is frequent amongst dyspeptics, irregular livers, and people who are large eaters. Possibly I may have reversed the order of cause and effect, and that the ulcerous condition is the cause of the indigestion which accompanies it.

The pathology of this disease is still obscure. Even the most recent writers on diseases of the stomach are by no means decided upon the subject of chronic ulcer. Notwithstanding the tendency of our medical literature to group the two forms of ulcer together, the one being as it were the sequel of the other, I can but suggest that they are two separate and distinct lesions. That there is a local death or necrosis of tissues in both must necessarily be conceded, but that they have common origins I am not disposed to admit.

I will point out one or two anatomical features of the spreading ulcer. It is situated in most cases near the pylorus. It is irregular in outline, the surrounding tissue consisting of the proliferated and heaped-up cellular elements of the various coats of the stomach which are involved. The process of necrosis and the chronicity of the inflammatory changes are points of importance. Before perforation can take place, in the majority of instances there is inflammatory adhesion to some solid viscus. The condition is somewhat comparable to that which obtains in chronic phthisis. The excavating process is sufficiently slow in each instance to allow of life-saving adhesions to neighbouring parts. As Dr. Sidney Martin well observes: "The anatomy appears to show that the ulcer was chronic from the first, and that there is little evidence that it originates in the acute form of ulcer."

Then as regards the symptoms of this condition or disease. There may actually be no premonitory warning. Indeed, cases have been recorded in which there were no symptoms, and the ulcer was discovered accidentally during *post-mortem* examination.

Handfield Jones, writing in 1860, said that the gastric symptoms may be absent, or so slight as to scarcely distinguish the case from

one of gastric catarrh. But I think we must admit that as a clinical picture the symptoms, whenever they are present, are marked and typical, and for these reasons the disease can be distinguished from the acute ulceration. Thus I find that pain does not come on directly after food, but often only supervenes some hours after, when the stomach is almost prepared for the next meal. I have always regarded this as being due to the usual site of the ulcer, near the pylorus. When pain does supervene it is often accompanied by yawning, an increased flow of saliva, and by intense malaise with clamminess of the face and body generally. Then vomiting ensues and is characteristic. The ejected matter is fluid, extremely acid, often foetid, and consists of partially digested food, possibly blood, but much mucus, together with shed epithelial cells, and often sarcina or other forms of parasitic life. But one characteristic is noteworthy, viz., the large amount of the vomited matter. It may be described as a huge vomit, and is often enough to fill a small wash-hand basin. Subsequently ensues very often an interval of comparative health and freedom from pain or distress. This interval indeed may be so prolonged, often three weeks or a month, as to lead to the supposition that there was no ulcerous state after all; or at least, if it did exist, that it is now healed. But the pain and distress and vomiting return, often after some indiscretion in diet, and the symptoms are renewed as in a previous attack. It is not a little remarkable that such sufferers are rather prone than otherwise to commit errors of diet. Their appetite is depraved; but the depravity does not run in one direction, as I shall have to show that it does in the perforating ulcer of young women. On the contrary, one man will have an inordinate desire to eat salads, another craves for shell-fish; whilst Ord has related the case of a gentleman whose appetite was only satisfied by a large dish of mashed potatoes.

For this reason alone the case always presents difficulties, and not a few disappointments in treatment. The patient, failing to obtain relief, goes from one physician to another, and we hear of him being under different forms of treatment both in England and abroad, so that we imagine that he must have a poor opinion of the powers of the profession. Then at last we are hastily summoned to his bedside, and find an emaciated and much altered man, who has had another severe attack of vomiting,

possibly with a larger amount of hæmorrhage than heretofore, and in spite of our remedies he dies from syncope.

In giving the above brief sketch of a case of chronic ulcer, I have purposely used the masculine pronoun, as one of my points of contention in separating the chronic from the acute ulcer is that the former is a disease essentially of males who have arrived at or passed the prime of life. You may ask, "What evidence have I in support of all this?" I wish to avoid figures, and statistics and tables, but I will, as the Scotch have, "lead evidence." It is not a little singular that in searching through the pathological museums in London it is extremely rare to find a specimen of the clean punched out perforating ulcer in a male stomach. Although my study has not yet extended to all the museums in London, so far as I have gone I have only encountered two. On the other hand the chronic indolent ulcer, with irregular and indurated margins, is a common specimen, and in almost every case the subject was a male over 40 years of age.

Addison gave a clinical lecture in 1861, the subject of his discourse being a case of hæmatemesis in an adult male. *Post mortem* a large chronic ulcer was found near the lesser curve of the stomach. Dr. Fuller in the same year described a case in a male, aged 61, in whom after death was found a large ulcer with thick callous edges, and which had a large opening into the peritoneum. Brinton, in 1863, gives a case of a male, aged 60, in whom there was a large gastric ulcer near the pylorus with extensively thickened edges. Even Wardell, who wrote an extensive series of lectures on the subject in 1876, although he describes one case, a male, aged 36, in whom there existed "a round, clean punched ulcer, the size of a fourpenny piece," yet in concluding his lectures he actually describes the two different varieties of ulcer as though they were separate and distinct pathological conditions. Habershon in his writings to one of the medical journals describes "an ulceration (of the stomach) very common in amenorrhœa." He goes on to say that "the ulcer is single, punched out; and differs from chronic ulcer of the stomach, which latter is slow in formation, with thickened margins and probably strictly inflammatory."

In support of my contention that the chronic ulcer is essentially different from the acute form, I would rather have the evidence of past and present masters of our profession. I admit

that my own position is not sufficiently strong to lay down laws in clinical and pathological research, which, however they may satisfy my own views, may appear to be didactic to others. But I have endeavoured to follow Darwin's plan of placing certain facts as well as opinions and observations of other men, with the view that such testimony shall lead your convictions in the same direction as my own.

On passing to the subject of Acute Perforating Ulcer, I would ask your indulgence, for I fear that my views may be thought too novel, and considered as not quite orthodox, at least by the majority of my audience. As you well know, this form of ulcer is most prevalent in women; indeed, it is almost limited to that sex. My figures work out to over 93 per cent. as occurring in women. Further, it is the single women who are attacked in preference to their married sisters, and for the most part between the ages of 18 and 50. I find that the influence of occupation and surroundings is as well marked, and follow the same direction as in chlorosis. That is to say, the disease is not limited to towns, but is found amongst dairymaids and farm servants, as well as amongst modistes, housemaids, and the like. And, in addition, we meet with it, though not so frequently, amongst the better class of young women, both urban and country residents. In other words, so far as its predisposing causes can be recorded, I find a similarity of ætiology as to age, sex, and occupation between chlorosis and acute ulcer. In both diseases a great preponderance of cases occurs in single young women, whilst possibly domestic servants and dressmakers account for more examples than any other rank or calling.

There is one important fact, however, which my observations have emphasised, and that is that every case of acute ulcer, without exception, in which I was able to get the previous history was preceded by pallor, breathlessness, craving for acid articles of diet, and all the various symptoms which go to make up the clinical picture of chlorosis. This fact is important, as on it hinges my argument and contention which I wish to put before this Society. The site of the ulcer varies, but its shape is constant. And herein are found two principal points of divergence between the two forms of ulcer. In the chronic ulcer we have seen that it is for the most part situated near the pylorus, and that it is a large abrasion of surface, with heaped up inflammatory

edges—an inflammatory product in fact ; whereas the acute ulcer, although perhaps most frequently near the lesser curve and on the posterior surface of the stomach, may be found in the cardiac region, on either curvature, and on either aspect of the viscus. Moreover, it is a clean punched out lesion, looking in some instances as though it had been perforated by some instrument. But there is no marked inflammatory proliferated zone surrounding it, and during the stage of active process there does not appear to be any alteration of tunics in the immediate neighbourhood, although it must be admitted that radiate puckerings and contractions are common after healing has taken place. May I here suggest that the lesion is a nerve lesion : another form of neurotic dystrophy about which Dr. Ord has written so graphically.

Next, if we consider the symptoms of the two conditions we shall note a marked difference. In the acute ulcer the pain comes on directly after food, and vomiting, which relieves the pain (another distinguishing point), supervenes within a short period. In fact half an hour is a long period for vomiting to be delayed. These two symptoms, therefore, as may be supposed, occur almost entirely during the day time. The pain is most frequently referred to the left side of the epigastrium ; but local tenderness is nearly always referred to the mid-line. After some weeks of suffering like this, or it may be months, hæmorrhage may occur. But in my experience hæmatemesis, although an almost diagnostic sign when occurring in a young woman suffering from the above symptoms, is by no means a constant one. As Dr. Donald Hood has observed to me, it often happens that the greater the pathological changes there are, the less marked are the symptoms, and ulcer may exist without pain, without vomiting, and without hæmatemesis. This absence of symptoms I apprehend may be due to the site of the ulcer. For example, notwithstanding the extreme vascularity of the stomach I have seen cases of ulcer situated on the anterior or in the posterior surface, midway between the curvatures, and in which there was a remarkable absence of symptoms, hæmorrhage never being observed in any form. This occasional absence of hæmorrhage was attributed by Sutton to the anæmic condition of the patient ; but I cannot agree with him on this point, else there never would be bleeding, since all the subjects are anæmic.

Let us now pass on to say a few words as regards the pathology of this interesting disease. The literature of the subject abounds in many suggestions as to the origin or starting point, although every writer is unanimous in saying that the concluding stage is one of local death, in which the necrosed portion is passed away by the bowel, or absorbed.

If I were to classify the various pathological theories (for they are only in the conjectural stage at present) I could label them as (1) mechanical, (2) vascular, (3) glandular, and (4) neurotic.

(1) As regards the mechanical group, Panum, in 1878, described a method of production of small ulcers by artificial (poppy seed) emboli. Virchow's theory of thrombosed vein as a cause has had a lasting influence on the profession, an influence which I venture to think is due rather to the exalted position of the pathologist than to any subsequent confirmation of his views. I am at a loss to understand how a thrombosis can be so minute, so localised, and so solitary as to cause the one perforating ulcer which is almost invariably found. The collateral circulation is too pronounced. Nor can a local traumatism be held as the cause. It has been shown that injuries to the mucous membrane by hot drinks, by the presence of foreign bodies, have existed for some time and have healed up; yet the process of healing has neither been accelerated nor retarded by the gastric juice.

(2) The vascular theory again is not satisfactory. If it be contended that some alteration in the rate and other conditions of the circulation, by which the normal alkalinity of the blood is lowered and the solvent action of the acid juice is increased, is the one factor in causing ulcer, then I reply that the same argument is fatal here as in dealing with the mechanical theories. Why is the ulcer single? Why is not the mucosa pitted with ulcers?

(3) The glandular theory had a supporter in Hodgkin in the first half of the century. He thought that in some cases of gastric ulcer the lesion was due to the secretion from the follicles producing a solution of these tissues in the immediate vicinity, apart from any alteration in the blood. It has been supposed by others that the origin of the ulcer is akin to that of boil. That is to say, the orifice of a gland is by some means obstructed, secretion is retained, with resultant inflammatory process followed by local necrosis and eventual discharge of the slough by ulceration. These surmises overlook the fact that the disease is confined to

one sex, that it occurs only in early adult life, and that it is an extremely chronic disease.

(4) A local neurosis is, to my mind, the only satisfactory pathology.

In order to be brief, I will recapitulate the principal points which appear to me to confirm this. They are as follows:—The great preponderance of cases amongst young women; the character of the lesion, reminding one in its appearances and extent of the perforating ulcer of the foot met with in *tabes dorsalis*. Ulcers, not unlike the one under consideration, are neuropathic evidence in herpes, whether it be labial, zona, or trigeminal; and, lastly, its undoubted association with, and probable sequel of, chlorosis.

This last clause is the most contentious proposition which I have advanced, and I would ask you to bear with me whilst I bring my evidence. In the first instance, it will be necessary to admit that chlorosis is a neurosis; for I think that if we are to argue that chlorosis and gastric ulcer have a common parentage, or that one is the sequel of the other, the argument can only be discussed on a pathological basis which may be common to the two conditions. In other words, I confess that if I am to argue that the two conditions have a pathology in common, this can only be discussed on the supposition that a neurosis is present in both.

Now, it is not a little singular that every writer on the subject of gastric ulcer draws attention to its association with chlorosis or anæmia. Says Addison, in 1861: “Amenorrhœa is often present (in ulcer) associated with either anæmia or cachexia. . . . In a variable period of time the supervention of all these symptoms conducts the disease to a climax, and it may terminate fatally by perforation, hæmorrhage, vomiting, or exhaustion.” Walshe, in 1849, lectured on a case of dyspepsia, vomiting, and hæmatemesis in a young female servant, in whom the diagnosis of ulcer of the stomach was arrived at. He went on to draw attention to her plump yet anæmic condition, just such as occurs in chlorosis; and he used this case as a text on which to lecture on chlorosis and anæmia. Wardell, in 1876, admits “that most writers concur in believing that between amenorrhœa (chlorosis) and ulcer there is some absolute but ill-understood correlation”; and he goes on to say, “there is no doubt that in an anæmic and

cachectic condition of the system, in which there is blood-change and a generally lowered vitalism, this form of ulceration is liable to occur." Ewald, in 1892, pointed out that the ulcer was comparatively rare amongst people who live largely on a vegetable dietary, this being probably due to the blood acquiring a richness in potassium phosphate; and concludes that "diseases such as chlorosis and anæmia, connected with changes in, or reduction in the number of the red corpuscles of, the blood would lead to the formation of ulcer, because they have, as a consequence, blood poor in potash." Again, he remarks: "We must accept as causal factors not only hyperacidity of the gastric juice, but also an altered condition of the blood when the acidity is normal. . . . *Suppressio mensium*, chlorosis, and anæmia after confinements have been too often observed in connection with ulcer of the stomach for it to be possible to doubt their causal relation to it." Further, he points out that cases of relapse are common, especially in those "patients of nervous and chlorotic temperament." Lastly, so as not to weary you, Dr. Sidney Martin, in his work on 'Diseases of the Stomach,' says: "Ulcer is frequently associated with chlorosis. There may be a history of an attack of chlorosis one year or more previously, the symptoms of ulcer developing subsequently."

Without quoting any more authorities, it will be evident that there is quite a consensus of opinion amongst them as to the co-existence of ulcer and chlorosis. I have drawn attention to this clinical fact in discussions before other societies, and I am somewhat surprised that it is a feature which has not been more frequently commented on.

There are scores of patients who come to our consulting rooms with the following clinical picture:—They are single young women, pallid, breathless, dyspeptic, and nearly always constipated. They have amenorrhœa or leucorrhœa, or some functional disorder of the catamenia. They have a depraved appetite, and nearly always a craving for acid fruits, or vinegar, or condiments, and there is marked tenderness in the epigastrium. This is what I have described as the pre-ulcerative stage of chlorosis. Finally, vomiting becomes urgent, hæmatemesis supervenes, and the diagnosis of ulcer is arrived at. I will quote only two cases which have recently occurred in my practice, one at the hospital, the other in private:—

L. S., aged 19, a laundress, had been under my care for nearly 15 months, suffering from breathlessness, pallor, distress after food, flatulence, constipation, and amenorrhœa. She had a loud hæmic murmur, best heard over the pulmonary area; she had musical murmurs in the course of the large vessels at the root of the neck; she had intense craving for sour fruits, acids, or "something sharp" as she called them; together with pain and distress after food, but no vomiting. I treated her with carbonate of soda and hydrocyanic acid, ordered her a light diet of fish, milk, and farinaceous puddings, and urged her to continue treatment until we dismissed her, at the same time cautioning her as to the risk she ran by neglect. She attended for a month or so, then stayed away, and came back after a few weeks with return of her old symptoms, only more aggravated. Then I lost sight of her, but heard from her sister that some two months after I had last seen her she was suddenly seized with acute pain in the epigastrium, and was admitted to the infirmary in a state of collapse, where she died. *Post-mortem* examination revealed the presence of a small perforated ulcer in the posterior surface of the stomach, such as I have described.

The next case occurred to me in private practice. Miss E. B., aged 24, consulted me for epigastric pains and distress coming on after food. These symptoms had only lasted ten days, but she had been under treatment by two practitioners for over twelve months, and had been told that she was suffering from anæmia. She had a loud systolic murmur, audible all over the cardiac area; she had intense pallor; the bowels were constipated; she had amenorrhœa; she had acid cravings, and also cramps in her calf-muscles at night. In short, her symptoms were typically those of chlorosis. But the recent advent of aggravated stomach symptoms led me to caution her about diet, and she was restricted to fish, milk, and farinaceous puddings. Notwithstanding these precautions, five days after I saw her I heard of her sudden syncope whilst dressing one morning, and a medical practitioner who was summoned found her almost collapsed, as she had had a severe attack of hæmatemesis, with all the other signs of acute gastric ulcer. I was able in subsequent consultation to confirm the diagnosis.

I have thus shown to you how the two diseases may have a relation—the one running into the other—even if I fail to

convince you that they have a common pathological ancestry. Moreover, I must again admit that the only satisfactory grounds of argument for this view are found in the proposal that both chlorosis and acute ulcer are neurotic in their origin. On the one hand we have such eminent men as Wilks and Moxon suggesting that "the cause of gastric ulcer may be analogous to ulcer of the cornea, which comes on in a debased state of the system and a general lowering of its vitality"; whilst on the other hand we have an experienced clinician like Dr. Ord describing in detail organic disease of the heart in some cases of chlorosis, and also in gastric ulcer; and he has, with much acumen, argued that these conditions, and possibly acute rheumatism as well, may be peripheral manifestations of nerve dystrophy.

The subject of treatment is one which I cannot pursue in detail within the time allowed for reading this paper. There is one point, however, which I would urge all practitioners to bear in mind: Do not delay to afford your patient surgical skill if you have even a moderate conviction that the ulcer has perforated into the peritoneal sac. Delay means death, and we should not allow any patient to perish for want of laparotomy. I would advise the operation ten times over, and find my diagnosis of perforation incorrect, rather than overlook the urgency of symptoms and have a death recorded against me, when the surgeon might have brought a cure.

Dr. THEODORE WILLIAMS observed that in respect of the connection of chlorosis and gastric ulcer it was probable that such close connection existed, but personally he was quite satisfied with Sir Samuel Wilks's explanation that both were due to a very low condition of the system. It was easy enough to imagine a weak condition of the stomach in chlorotic girls. With reference to the influence of constipation in connection with anæmia, which had been dealt with by the late Sir Andrew Clark under the title of 'Fæcal Anæmia,' he said he had pointed out at the time to the author of that paper that while constipation was the rule in France, anæmia appeared to be less frequent in that country than over here. He had asked the author how he reconciled this fact with his contention that purgation was at least as necessary as the administration of iron. He had hoped to hear something more about the treatment of gastric ulcer, especially as in many of the cases the patients died of hæmorrhage before treatment was commenced. His own plan was to give up the administration of food and drugs by the mouth altogether, and where there was a very clear history of gastric ulcer this treatment had given excellent results. He referred to the case of one young woman who was kept in bed for a month, being fed regularly

by nutrient enemata, and eventually all the symptoms passed off and she left the hospital in good condition. He mentioned as a curious fact that she became bilious, but this was not surprising seeing that no food, &c., had been passing along the duodenum, so that there had been nothing to stimulate the flow of bile, which was consequently reabsorbed. He was not convinced that there was after all such a close connection between chlorosis and gastric ulcer, seeing that one was very common and the other comparatively rare.

Dr. MAGUIRE said there was certainly a connection between the two conditions, but he confessed that he did not think it was that suggested by the author. Chlorosis was a form of anæmia very different to anæmia in other conditions. It only occurred at the time of development, and it was quite unnecessary to invoke the nervous system to explain its pathology. In chlorosis there was simply an irregular development of the body as a whole. The body was developing rapidly, but certain functions—notably the blood-making function of the female—did not develop *pari passu* with the others. In this condition iron was not always an effectual remedy unless combined with arsenic which, as is well known, stimulated the blood-forming function in other forms of anæmia. He opined that in consequence of the anæmia there was a general loss of vitality which rendered the stomach more prone to undergo injury from improper articles of diet or made it more easily attacked by the gastric juice. There was, consequently, an initial lack of development of the blood-forming organs and the gastric ulcer would be the result of the lack of vitality thus produced.

Dr. BOWLES said that an old country doctor had pointed out to him some years ago the fact alluded to by the author, viz., that gastric ulcer was mostly confined to young girls and, like anæmia and acute rheumatism, appeared to be the result of disturbed innervation and inadequate nutrition. He believed that these maladies were due chiefly to the overwork or excitement to which these young girls were subjected during a critical period of their existence, before the body was completely developed and before the blood-making processes were thoroughly established. Generally it arose in domestic servants, especially in “maids of all work,” and one must remember that they were the hardest workers of the household and had the least amount of sleep. Under these circumstances the treatment of gastric ulcer in its earlier stages was very simple; nothing wonderful was required but rest, composure of mind and body, and the strict observance of general hygienic rules. It was in the early conditions of gastric ulcer, before the ulcer had formed so to say, that treatment might be used with most advantage. Bismuth, prussic acid, opium, and, above all, rest and suitable food constituted, he thought, the primary elements of a successful treatment. There were other remedies, such as iron and aperients, applicable to particular cases, but these were the general principles which must underlie any method of treatment. Aperients must be given with much caution when the ulcer had once formed, as loose bowels are often the forerunners of severe hæmorrhage. When the hæmorrhage was active, he had found tinct. ferri perchlor. in drachm doses in water of the greatest value.

Mr. WALLIS said he would have liked more statistics with respect to chronic ulcer, for it would have been interesting to know the *post-mortem* pathological appearances of these ulcers in the various cases related by the author. There were many points in regard to these ulcers which would have been more instructive if more fully brought out. With regard to acute ulcer, he agreed with Dr. Maguire that the system was

out of gear in these cases and that chlorosis was often the preliminary stage of gastric ulcer. In such persons an abrasion of the skin took a long time to heal and probably the same mechanical condition obtained in the stomach. Given a mechanical abrasion and a poor condition of health there was no difficulty in understanding why it should go on from bad to worse. He concurred in what the author had said with regard to the importance of rapid diagnosis and rapid treatment in these cases when perforation had taken place. It was a fact that such cases were being more rapidly dealt with than was formerly the case. He mentioned that he had been called upon to perform laparotomy in a case where there was a very clear history of hæmorrhage and gastric ulcer and the symptoms appeared to point distinctly to perforation having occurred, but when the stomach was brought to view it was found to be quite healthy and it turned out to be a case of hysteria from beginning to end.

The PRESIDENT observed that the interest chiefly centred round the perforating gastric ulcer. The author had brought forward facts to show that it was for the most part confined to a particular period of life in young girls—in fact, with an anæmia which was associated with the developmental period of life, especially that period during which the catamenia first made their appearance and continued, or should continue, in their fullest physiological activity. He observed that it was strange, in view of the general condition of the debility induced in overworked girls, that there should be a peculiar morbid process affecting not merely the stomach, but only one small part of the stomach—a little bit of the mucous membrane. The lesion was limited to a very small portion of the membrane. He pointed out that there was another way in which a tropho-neurosis could do its work, viz., through the vascular system, leading to a local contraction of the vessels, followed by necrosis. There were strong arguments in favour of its being due to a tropho-neurosis, but there were also strong arguments in favour of a defect of the blood-forming apparatus.

Dr. SEYMOUR TAYLOR, in reply, pointed out that if anæmia were, as stated by Dr. Williams, rare in France, it was common enough in the islands near France. He agreed that perfect rest, physiological rest, was the best treatment. If the patient could not keep the food down, then he gave nutrient enemata; but otherwise he preferred milk, peptonised if thought desirable, with a little opium in it. From time to time he gave small quantities of sterilised water, which relieved the thirst. It had occurred to him to try the application of oxygen directly to the gastric lesion, but so far he had not been enabled to carry his idea into practice. It was agreed that chlorosis occurred at the period of development, but so did gastric ulcer—that, indeed, was his contention. He agreed that it might well be due to a debility produced by an arrest of development of the blood-forming organs, but he could not divorce from his mind the fact that the two things went together, and that they stood in the relationship of cause and effect. With regard to Mr. Wallis's contention that the ulcer might follow abrasion, he observed that the people who swallowed swords, &c., must occasionally injure the stomach, yet they did not develop ulcer because they were men, whereas the ulcer only developed in young women. It was the local nature of the lesion that first struck him and inclined him to the idea that it was a neuropathic lesion. He insisted on its resemblance to the foot ulcer of tabes, or after herpes, and to phlyctenular ulcers of the cornea, which were certainly neuropathies. In conclusion, he admitted that there might be a neuropathic vascular pathology which remained to be worked out.

March 28th, 1898.

THE VAGUS ORIGIN OF ASTHMA AND ITS TREATMENT.

By ERNEST KINGSCOTE, M.B., C.M. Edin., L.R.C.S. Edin.

I AM the more gratified at having an opportunity of reading a paper before this Society from the fact that during the last four years, whilst engaged exclusively in the treatment of heart affections, I have stumbled upon such extraordinary phenomena, with regard to spasmodic asthma, that I am very anxious to place them before the medical profession for their consideration and thorough investigation. That keen observer, Hippocrates, some 380 years before Christ, is said to have described asthma pretty nearly as accurately as it is described in the text-books of to-day (*vide* Berkhart on 'Asthma'), and from that day to this, namely about 2,280 years, the search lights of science, though shed in many directions, have hitherto failed to dissipate the haze which envelops the symptoms which we call spasmodic asthma. I say symptoms advisedly, for the causes of asthma are manifold, their effects constant, and consisting essentially in spasmodic contractions of the muscles surrounding the bronchioles,* asthma being, therefore, just as much a symptom as headache or cough and not a disease. In order to emphasise the necessity of endeavouring to discover some relief from this terrible scourge to humanity, I should like to read a short paragraph from that unique monograph by Dr. Salter, some time physician to the Charing Cross Hospital, and himself a martyr to asthma, which was published in 1860:—

“But not only is asthma not an uncommon disease, but it is one of the direst suffering. The horrors of the asthmatic paroxysm far exceed any acute bodily pain; the sense of impending suffocation, the agonising struggle for the breath of life, are so terrible that they cannot even be witnessed without sharing in the sufferer's distress. With a face expressive of the intensest agony, unable to move, speak, or even make signs, the chest

* Trousseau describes asthma as an “epilepsy of the lungs.”

distended and fixed, the head thrown back between the elevated shoulders, the muscles of respiration rigid and tightened like cords, the tugging and straining for every breath that is drawn, the surface pallid or livid, cold and sweating—such are the signs by which this dreadful suffering manifests itself.

“And even in the intervals of health the asthmatic’s sufferings do not cease; he seems well, he goes about like his fellows and among them, but he knows he is altogether different; he bears about his disease within him wherever he goes; he knows he is struck; ‘*Haeret Lateri Lethalis arundo*’; he is conscious that he is not sound—he cannot be warranted; he is not certain of a day’s, perhaps not of an hour’s, health; he only knows that a certain percentage of his future life must be dedicated to suffering he cannot make an engagement except with a proviso, and from many of the occupations of life he is cut off; the recreations, the enjoyments, the indulgences of others, he dares not take; his usefulness is crippled; his life is marred; and, if he knows anything of the nature of his complaint, he knows that his sufferings may terminate in a closing scene worse only than the present.

“And not only is asthma thus comparatively common and superlatively distressing, but it is peculiarly and proverbially intractable. The asthmatic is generally looked upon as an asthmatic for life, as one who, though he should suffer many things of many physicians, would be nothing bettered but rather grow worse, and the treatment is regarded as palliative.”

It is pretty generally conceded that the origin of asthma is to be found in the irritation of one or several of the many ramifications of the vagi, whether from the origin in the medulla, from Meckel’s ganglion, as in hay fever, from the superior laryngeal, from ear mischief through Arnold’s nerve, through the pharyngeals, through the recurrent laryngeal, through pressure on the main trunk in the neck (Mr. Treves permits me to quote a case of his in which the severe spasms of asthma were set up by “the pressure of cancerous glands in the neck on the vagi”).

Through irritation of the heart, lungs, stomach, liver, spleen, bowels, or sympathetic system, it is difficult to evade vagus origin. Further, there must be some comprehensive means of setting in motion even a small fraction of the muscles which envelop the (according to Professor Rutherford) billions of bronchioles which exist in the lungs. Also there is one, and only one, known means

of artificially producing asthma, which is as follows:—If we chloroform a dog, and divide the left vagus and gently stimulate the proximal end with electricity, in addition to other phenomena, we produce *asthma in the right lung, and tonic contractions of the right half of the diaphragm*. In addition to these ascertainable causes of vagus origin, however, there still remains a large class of obscure cases whose origin is unascertainable; and I will endeavour to suggest that it is precisely from these obscure cases that we shall possibly derive the light which may illuminate the obscurity. In the words of Frederick Hovenden: “It may be that we shall in part fail, but the failure will probably be a step by which others will arrive at the end we aim at.”

Initial Observations.—In treating chronic heart lesions it happened that some few of my patients suffered from asthma; they did not consult me *quâ* asthma (they had already exhausted medical opinion on that score), and to my intense astonishment some of these cases, but only some, entirely lost their asthma; I further observed that it was precisely those cases which had no ascertainable cause of asthma that got well; and, later on, that those of such cases which recovered, invariably had a deep-seated dilatation of the heart, and that the improvement in the asthma marched with the reduction of the cardiac dilatation. This set me thinking. I had already in an article in ‘The Lancet,’ March 21st, 1896, on the “Schott Treatment,” made the following suggestion:—

The amount of space taken up in the thorax by the enlarged heart suggests a train of thought which may perchance prove highly instructive in dealing with certain obscure symptoms, among which the following may be instanced as direct effects of pressure:—

(1) Mid-sternal pain from pressure against the sternum.

(2) Suffocation from pressure on the lungs, vagus, and diaphragm.

(3) Brachial pain, tingling, numbness, and coldness from pressure on the plexus and axillary artery in the space between the first rib and clavicle. This may happen, the shoulder being fixed, from the dilated heart pressing the ribs outwards and upwards. I have been a sufferer from brachial neuritis for six months under the care of Dr. Gowers, and frequently found that

on fixing the shoulders, and therefore the clavicle, and taking a deep inspiration, pain was immediately felt where the branches of the plexus pass under the clavicle.

(4) Pain from neuritis of the intercostals, from intermittent pressure of the dilated heart.

(5) Referred pain in distant parts (*vide* Treves's 'Surgical Anatomy').

(6) Pressure on vagus, causing (a) intermittent action of the heart by alternately stimulating and paralysing the cardiac inhibitory fibres; (b) gastric disorders of various kinds; and (c) cough, &c., from stimulation of the recurrent laryngeal nerves. In one case severe pain in either ear supervened without any local origin, and subsided when the dilated heart was reduced, although it had previously resisted every sort of local application, suggesting interference with Arnold's nerve.

(7) Interference with nutrition through pressure on the thoracic duct.

(8) Obscure vascular conditions, such as angina pectoris, possibly due to pressure on the sympathetic system exaggerating the arterial tone. I found the heart considerably dilated in a case of true angina pectoris, in which the patient complained of a severe thoracic fulness, with pain in the back and left arm before each attack.

(9) Pain between the shoulders is a very common symptom in considerable dilations, and may be proved to be partly due to backward pressure of the heart, by the pain leaving the back and establishing itself in the præcordial region on the assumption of the prone position.

(10) That sub-mammary pain is often due to pressure of the cardiac apex against the ribs and intercostals is proved by the shifting of the pain, correspondingly to the change in the position of the apex, and to its disappearance on the reduction of the heart to the normal size. I have seen all of these symptoms yield to the "Schott Treatment" under my hands, not excepting those of true angina pectoris, and in reply to those who have found the method unsuccessful and even harmful, I can only say that such has not been my experience, and that either they have imperfectly grasped the *rationale* of the treatment, or they have been unfortunate in their selection of cases.

Now, considering that one-thirteenth of the body weight is

blood, a large dilatation of the heart, say the size of a football (not at all an uncommon condition), is a very heavy tumour, and weighs about as much as half a bucket of water, and the heart flops in the direction of gravity, and in the supine position can exert considerable pressure on those structures which lie behind it. On making a deep dissection of the chest we find that the vagi pass behind the heart, and lie in close contiguity to the bony spine, so that the heavy heart can exert a pressure on their main trunks, and not only that, but with the heart-beat hammer the nerves as though on an anvil.

These magnificent diagrams are by Loreau, of Paris, and have been kindly lent to me by Mr. Nelson Harness, of King's College. I have also here a plate from Braune's frozen section, which illustrates the relationship of the vagi to the back of the heart. (The plate was shown.)

I here remembered the experiment on the vagus of the dog above referred to, the significance of which at this juncture is obvious. It is also significant that the position which nature teaches the sufferers from asthma to assume during the paroxysm is either prone on the floor, in the knee elbow position, or hanging out of the window or over the chair back, or some such similar position, as though to relieve backward pressure. This also obtains in cases of thoracic tumour. I will now read brief notes of ten of these obscure cases, and for the sake of brevity will only allude to those facts which bear on the point at issue.

CASE 1.—Male patient, a clergyman, aged 36 (in consultation with Sir Felix Semon). Asthma from birth. Consulted me August, 1897. Left heart $2\frac{1}{2}$ inches outside the nipple line, nasal mucous membrane enormously swollen, and heart completely covered by emphymatous lung; asthma now constant. After six weeks' baths, oxygen, and exercises, and removal of thickened membrane, asthma gone and emphysema very much reduced, heart normal. Letter from Calcutta, December 23rd: "I am keeping perfectly well, and *entirely free from asthma*."

CASE 2.*—Male patient, aged 29; asthma 20 years' standing, now constant; influenza three times; left heart margin 2 inches outside nipple line; consultation with Dr. Ord, much emphysema. Six weeks' baths, oxygen, and exercises. *Asthma gone*; heart normal; emphysema much reduced. March 14th the same.† It is also to be noted that at

* This case and the following one were shown at the previous meeting.

† Towards the conclusion of the treatment this patient had a severe fall on the head, which reproduced the dilatation and the asthma, the latter, however, disappearing when the dilatation was again reduced by treatment.

this date the sense of smell returned, which had been absent for many years.

CASE 3.—Male patient, aged 41 (in consultation with Dr. Fletcher Little); asthma from boyhood, began after severe strain. Left heart dilated 3 inches; much emphysema. Six weeks' treatment, quite well. Letter from patient's father, January 13th: "My son has now been with us five days, and we have had the opportunity of observing the complete change your treatment has wrought in him, not only in general health, but *in entire loss of his asthma.*" This patient, after having lost his asthma, had a cab accident, reproducing the heart's dilation and asthma, both of which again disappeared on treatment simultaneously.

CASE 4.—In consultation with Dr. Scott, of Bournemouth. Female patient of very full habit, aged 63. Huge heart dilation and suspected fatty condition, brought on by the successive deaths of three of her children. In 1887 cardiac asthma with great debility on the least exertion; mitral regurgitation. Six weeks' treatment. *Asthma gone* and heart normal. Recurrence of conditions and asthma on death of a fourth child.

CASE 5.—Also in consultation. December 1st, 1896. Female patient, aged 40; severe asthma at 13, which disappeared till six years ago, when it came back after four attacks of influenza. Five inches dilatation. Every autumn has either to retire to her bedroom or go to Algeria. Seven weeks' treatment, heart normal, *asthma gone*; invasion of bronchitis, but no asthma; went through London season, cold bath in the morning. In autumn of same year, letter from mother in Nauheim saying daughter very ill with gastric ulcer; *still no asthma.*

CASE 6.—April 22nd, 1897. Female patient, aged 71. Left heart dilated 4 inches from long continued strain and repeated shocks; asthma constant. Six weeks' treatment, *asthma gone* and heart normal. July 6th, the same; at present quite well.

CASE 7.—October 29th, 1897. Female patient, aged 59. Dilated heart from worry and influenza; asthma on exertion, especially in autumn. Six weeks' treatment, everything normal. Letter, February 2nd, 1898: "*About the asthma, I am not really at all troubled with it now, and feel much less oppression in chest and altogether. I can go up and down stairs and take a walk of a mile or so often with pleasure.*"

CASE 8.—June, 1897. Boy, aged 14. Left heart $1\frac{1}{2}$ inches; hay asthma now present, and on exertion. Fourteen days' exercise only, heart normal; present attack of hay fever disappeared after two days' exercises, and has not since returned.

CASE 9.—September 20th, 1897. Female patient, aged 64. Left heart $4\frac{1}{2}$ inches; mitral regurgitation, asthma on exertion. Five weeks' treatment, heart normal, *asthma gone*; recurrence of conditions and asthma after severe carriage accident.

CASE 10.—In consultation with Dr. Symes Thompson. A male patient, aged 56. Asthma of 46 years' standing. Left heart dilated 2 inches; much emphysema. December 19th, 1897. After six weeks' treatment, heart normal, emphysema much reduced, asthma improved to the extent

that whereas formerly cold air produced an attack lasting some days, it now disappears on entering a warm room. March 19th, 1898, I hear from the Riviera that this patient has not lost his asthma.

Now, Cases 2, 3, 4, and 9 almost prove the asthma to have been due to cardiac dilatation, from the fact that after it had departed it reappeared on the reproduction of that dilatation. In Cases 2 and 3 it again disappeared under treatment, as it doubtless would have in Cases 9 and 4, had they again come under treatment. In Case 1 we have two causes of asthma: (1) thickened nasal mucous membrane, and (2) cardiac dilatation, which were removed by Sir Felix Semon and myself respectively, with the result of complete recovery of the patient.

Case 10 is Heaven-sent to save us from a subtle suggestion of selecting our cases, which inevitably obtains in connection with new departures.

Case 10 is, however, quite alone amongst the cases quoted in his misfortune, and has but the sad satisfaction of posing as the exception which goes to prove the rule. However, I have not yet given up all hope of a good result even here, as it is proverbial that disturbance of nerve impulses takes a long time to recover from (*vide* the various pareses), and it is just possible that the rapid relief obtained by all the other cases may have been a coincidence, and that these patients' nerves possessed extraordinary recuperative powers. Further, there may have been some other form of irritation, such as a small and benign thoracic tumour, or there may have been some central lesion which we had failed to make out.

Since writing the above, Dr. Groedel, of Nauheim, happened to call on me, and he tells me that he has repeatedly observed an improvement taking place in cases of asthma, and a reduction of the concomitant emphysema, with the Nauheim treatment, especially when the asthma was cardiac. He published observations to this effect in 1880, in the 'Berliner Klinische Wochenschrift,' entitled "Pneumatometrische Beobachtungen über den Einfluss verschiedener Bäder auf die Respiration."

Now there are two obvious criticisms which naturally occur to us:—

- (1) If these things be, why are these cases not oftener diagnosed? and
- (2) Why do not all cases of heart dilatation have asthma?

(1) In the asthmatic of any long standing there is usually a large amount of emphysema, which makes accurate percussion of the heart's margin very difficult. Now I must ask you, merely for the sake of argument, to provisionally accept a statement that ordinary percussion is of little or no value in these cases. I published a short article in 'The Lancet' of December, 1897, on this subject, and I hope, at no very distant date, to have an opportunity of reading a paper thereon; but there is no time to go into the matter to-night, and I must ask you, therefore, to provisionally accept my statement.

(2) If the dilatation be very great, the heart flops over on either side of the bony spine, and thereby assumes a hollow conformation immediately over it, by which means perhaps the vagi escape pressure.

Working on these lines, we are able, either with or without the aid of various specialists, to, in the majority of cases, accurately diagnose the seat of vagus irritation, and either remove it or get it removed. By these means we are able in many cases to give a very favourable prognosis, even in the most stubborn cases, provided that we can make out the seat of vagus irritation, and I am bound to say that hitherto results have justified such a procedure. There is no time to-night to enter into the details of treatment, but I will just say that my methods consist of a considerable modification of the "Schott Treatment," combined with the inhalation of free oxygen gas twice daily in those cases which are due to cardiac dilatation.

It is also worthy of note that the inhalation of oxygen gas seems to relieve the paroxysm, which is conceivable, as the remote cause of asthma under certain conditions must be the appetite of the blood for oxygen.

I wish it to be very clearly understood that I am not advocating a panacea for asthma, but it has so happened that the study of one class of asthma cases (viz., those with cardiac dilatation) has led to researches which may possibly throw light on the rest.

I have used a modification of the "Schott" methods to reduce these dilatations. Others may prefer to arrive at the desired destination by a different route.

If I have succeeded in exciting the interest of the profession in a matter which to me is an absorbing one, I have not written in vain.

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Dr. THEODORE WILLIAMS said he was not altogether convinced by the views advanced by the author, though the impression he would carry away would be that it might be worth while in difficult cases of asthma to give the Schott treatment a trial. He had tried this in heart disease, but not in spasmodic asthma. He admitted that possibly the reduction in the size of the heart might in some of the very obstinate cases of asthma do a great deal of good. With regard to the pathology of asthma he said he had been unable to make out whether the author held it to be an affection of the vagus or of something else. He himself held that it was a neurosis of the anterior and posterior pulmonary plexuses. Every student knew that the vagi and recurrent laryngeals, along with certain spinal nerves and a number of the sympathetics, contributed to these plexuses. With such elaborate connections as these nerves implied, one could easily see how attacks of asthma might be brought on by a variety of stimuli, and this, however, was generally admitted. The author had not gone into the question of treatment of asthma in other ways than by the Schott measures, but had spoken as if asthma were quite an incurable disease, if indeed it could be considered a disease at all. That he was not prepared to admit, as in most cases much could be done. He recalled the advice long since given him by a colleague, never to give up a case of asthma as incurable until he had tried 10-grain doses of iodide of potassium three times a day. Then there was the compressed-air bath, which often conferred great and even permanent relief. The cases in children supervening after whooping cough, &c., were often due to enlargement of the bronchial glands which iodide of potassium would affect favourably. He protested against it going forth that asthma was an incurable disease, as it was quite the reverse.

Sir FELIX SEMON said that, so far as he understood the author's remarks, he had merely brought forward one other possibility concerning the nature and the treatment of asthma. The paper was eminently suggestive, but the author did not bring his suggestion forward as a new gospel. It was interesting to think that direct irritation of the vagi by the enlarged heart might produce such effects, and in this respect Braune's sections of frozen bodies certainly seemed to support the author's contentions. He doubted, however, whether the position of the organs in the dead body was the same as during life. Anyhow, the author's suggestions certainly merited consideration. If a good many cases were being cured which were formerly looked upon as incurable something had been gained. He wished to point out with regard to Dr. Williams's observations that, even after deducting the cases, numerous as they be, which yielded to 10-grain doses of iodide of potassium, there remained a large residue of cases that were uncured, and it

was useful to know that in such cases it was worth finding out whether there was a dilated heart. The author had quoted the case of a clergyman in whom he had found a much dilated heart. This patient had been sent on to him by the author on account of considerable swelling of the nasal mucous membrane. He himself must confess that he was unable to make out any heart dulness at all on account of the emphysema. The patient was 40 years of age, the asthma had existed from early infancy, and the chest did not expand at all. The mucous membrane over the turbinated bones was certainly much swollen. On former occasions he had expressed his scepticism on the frequency of nasal asthma, and the effects of treatment directed to the nose, for which, at the time, he had been severely taken to task, but his subsequent experience had not improved his scepticism. There were undoubtedly a few cases, a very few cases, in which a lasting cure was effected by intra-nasal treatment; there were some more in which temporary improvement was produced, and in the majority the result, in his experience, was quite negative. He agreed with Dr. McBride that in the second category the intra-nasal treatment had the effect of a blister applied to a very sensitive spot. The worst of it was that one could never know beforehand whether the intra-nasal treatment would do good in a particular case. Therefore, *pace* some of his younger friends, he always told the patient that the treatment was purely experimental, that it could not do any harm, and might even prove successful, but that no definite promise could be given. To Dr. Kingscote's patient he had expressed himself even more sceptically than usual, for the emphysema was enormous. The patient, however, decided to have intra-nasal treatment carried out, and he therefore cauterised, with the galvano-cautery, the swollen parts of the mucous membrane, and sent him back to the author. He had subsequently received a note from him saying that ever since the treatment he had remained quite free from the asthma. He, of course, could not say what share of the result was due to the nasal treatment and what to the other. Anyhow, however sceptical one might be in regard to the nature and treatment of such cases, he thought it was their duty to record the results.

Dr. THOROWGOOD pointed out that cases in which asthma was due to a dilated heart were quite distinct from cases of the ordinary spasmodic asthma. He related the case of a patient at the Victoria Park Hospital with emphysema and dilated heart. He became cold and blue when the attacks came on, evidently in consequence of the cardiac enlargement. Treatment directed to the heart did him much good, and it was noticed that in this, as in many cases of cardiac asthma, fuming inhalations, instead of relieving the patient, often made him worse. What relieved him very much was the inhalation of oxygen. At that time there was in the wards a little boy suffering from severe spasmodic asthma with inspiratory dyspnoea. Inhalation of oxygen in this case seemed to aggravate his condition, though fuming inhalations relieved him, as did citrate of caffeine. The cases of cardiac asthma referred to by the author must be kept distinct from the cases of pure spasmodic asthma met with especially in young people, which recovered as they grew in years.

Dr. MAGUIRE observed that the first question was whether the enlargement of the heart could irritate the vagus so much as to cause asthma. Allowing for a little exaggeration, he thought it must be understood that there could not be such a degree of pressure in the chest as to produce asthma, and such pressure, if it existed, would produce irritation also in

other branches of the vagus than those going to the bronchial tubes. He insisted on the influence which negative tension played in the chest. All the organs in the chest were under the influence of negative tension which would tend to annul any pressure of the heart upon the vagus. Then, too, according to physiology, the asthma which would be produced by irritation of the vagus must be expiratory asthma. He admitted that he had an enormous weight of authority against him in saying that he did not believe that asthma was as exclusively an expiratory dyspnoea as was taught by the text-books. In the next place, even if enlargement of the heart could act so, there remained the question whether there was always enlargement of the heart in cases of asthma. He had seen and examined a good many cases in which no method of examination gave evidence of any such enlargement. He referred to one case of Dr. Kingscote's, that of an officer who had come with enlargement of the heart, and was also suffering from asthma. This patient was treated for the enlargement of the heart and was cured of his asthma. But he was stated to have had asthma since the age of 8, and had been passed for the army, so that he could not possibly have had any enlargement of the heart at that time. Dr. Maguire dissented from the currently-received view that asthma was due to a spasm of the bronchial tubes. This was entirely an assumption with no facts in its favour. It was certain that by irritation of the vagus one could produce spasm of the tubes, but that spasm would not last a long time. The clinical facts were against such a theory. There were various diseases grouped under the head of asthma, as, for instance, dyspnoea produced by heart disease. This was not asthma but cardiac dyspnoea. There was a neurotic type and lastly the typical spasmodic dyspnoea, in which the cough continued until the patient had brought up a quantity of sputum, sometimes frothy, but usually viscid, containing the bodies known as Curschmann's spirals. He recalled the case of a man who had been expectorating casts of the bronchial tubes and when this ceased he developed severe spasmodic asthma. He alluded to the condition observed in false croup, in which the child woke up gasping for breath with a hoarse cough, and then after a time this subsided and the child fell asleep again. In those cases nothing more could be discovered than some congestion of the larynx, which came and passed off suddenly. He saw no reason why a similar condition should not obtain in the bronchial tubes. The course of the disease was clearly in favour of this view, and so was the action of the remedies. Iodide of potassium was the great remedy for the resolution of inflammatory exudations, and for promoting secretion from mucous membranes. Anti-spasmodics might be said to relieve the spasm of the bronchial muscle fibres, but there was another muscular structure involved, viz., the muscularis mucosa, and if the spasm of that muscle were relaxed, air might pass. He ventured to assert that asthma had nothing to do with irritation of the vagus or bronchial spasm, but was simply due to a rapidly occurring congestion or inflammation of the mucous membrane, relieved by secretion.

Dr. MORISON agreed with Dr. Maguire that it was impossible [to imagine that a heart, however much enlarged, could possibly exert an anatomical pressure upon the vagus. At the same time, he did not think that anatomical disproof of such direct pressure took them away from the vagus theory of the production of asthma. He thought that many would agree with him in the view that this condition of spasm of the bronchial

tubes, accompanied by dyspnœa and secretion, especially in children, was the result of reflex irritation. Many children who came with bronchitis could be easily determined on examination to be suffering from gastric or pneumogastric asthma due to some intestinal disturbance, and when this was relieved the asthma and dyspnœa subsided. He referred to the case of a child who had been suffering for three weeks, and was apparently getting worse, from general bronchitis, and had resisted all treatment. There was localised inflammation of the lung, which was diagnosed to be the cause of the asthma. He diagnosed intestinal irritation and ordered some bismuth and salol, and the symptoms subsided in the course of a few hours. It must have been a reflex asthma in this case, and when in dilatation of the heart one could get rid of the dilatation and thereby relieve the asthma, it was fair to assume that a source of irritation was removed. He pointed out that most of the author's cases were cases of what most of them would call cardiac dyspnœa. Could such cases be explained upon the neurotic basis? There need not be any congestion of the lung, but he suggested that the raised endocardial pressure itself might be productive of nervous disturbances. This might produce a certain amount of stretching which would create an indirect reflex. Probably, however, they had to do with a vasculo-neurotic reflex rather than a pneumogastric reflex. He thought that it was disastrous that the so-called ballooned hearts should be brought before the public. He confessed that he had never seen these extremely dilated hearts, though he used the ordinary methods of percussion. Had there been such phenomenally dilated hearts to be discovered, he thought that with his experience he would have come across at any rate a few examples. He thought the alteration after treatment was due not only to some disgorgement of the heart cavity, but also to the more vigorous change of position, which was brought about by a more active heart. He added that Dr. Groedel, of Nauheim, was present on the last occasion, and had requested him to read a few remarks on the subject. Dr. Groedel divided asthmatic patients into two classes:—(1) those with various kinds of cardiac failures and insufficiency, especially those with weak right ventricles, causing pulmonary congestion, overloading of the lungs with blood, and causing a condition called in Germany "Lungenstarrheit," i.e., rigidity or stiffness of the lungs; (2) patients with emphysema and chronic bronchitis associated with a weakened and at first hypertrophied heart. In the first class of cases the principal object was to strengthen the heart, to increase its power, and if this were effected, the abnormal condition of the heart would disappear or be diminished, without any special treatment of the lungs themselves. He usually employed baths alone in such cases—at any rate, to begin with—in order to relieve the heart, the patients avoiding all exertion. Heart-stimulating baths and exercise were contra-indicated so long as there was congestion of the lungs. In regard to patients of the second class, they had not only to deal with the weak heart but also with the primary disease of the lungs. In such cases they combined with advantage the baths with pulmonary gymnastics, especially in order to augment the expiratory period. With this object in view he often made use of the "asthma stuhl" of Rosenbach. In many cases of this kind, besides the improvement of the asthmatic complaints, one obtained by invigoration of the heart also an amelioration of the condition by increasing the elasticity of the lungs, and with this a diminution of their distension. He thought this was due to the influence of the baths on the respiratory power, especially

expiration brought about by their temperature and mechanical pressure, and by their gaseous and mineral ingredients by direct and reflex stimulation. A shrinkage of distended lungs was, of course, only possible so long as the lung tissue was not altogether degenerated by fibrous changes. In cases of idiopathic or nervous asthma without cardiac trouble the Nauheim treatment was not indicated. He added that a good result in cases of cardiac asthma was also to be obtained without the Nauheim treatment, but only with rest and heart tonics. It was sometimes advisable to give such drugs during the treatment by baths, and the drugs were often helpful when taken during a course of baths, which had been of no use when taken previously. In conclusion, he was of opinion that the beneficial result attained by the bath treatment in combination with exercises lasted longer than that attained by rest and drugs alone.

Dr. SYMES THOMPSON said the case of his own referred to by the author was one of long-standing spasmodic asthma, not of dyspnoea associated with degenerated heart. The heart, however, was dilated in consequence of old asthma and emphysema. In cases of this type, in which asthma had long existed and had resulted in degenerative changes, they were not called upon to believe that the asthma was caused by the dilated heart; the author had carefully guarded against this inference in his paper, merely giving it as one of the common causes. Under the influence of skilled treatment the dilated heart improved. There were a great many cases of chronic asthma difficult to deal with, not readily amenable to drugs, which could be successfully treated by patient, persevering management, such as was customary at spas. In many cases good results had been obtained by sending such patients to Buxton or Malvern, &c., where the details of their daily existence were carefully looked after. Without going into the physiology of the subject, or endorsing all the statements which the author had made, he was ready to admit that many cases of obstinate asthma might be improved by the special treatment he advocated.

The PRESIDENT observed that Dr. Thompson seemed to deprecate physiological considerations, but the author's contentions were essentially physiological. The author, in fact, laid it down that there must be some reflex irritation communicated to the pneumogastric, and he had speculated as to the mode in which this irritation could be brought about. Dr. Morrison had suggested intra-cardiac pressure might be the cause of the reflex in that one variety, for the author did not pretend that it was anything more than one variety, and that a rare variety, of asthma. The President pointed out that the heart was enclosed in a membrane, the pericardium, and this had been shown to be a very resisting structure. He suggested that it was within the range of possibility that considerable dilatation of the heart might put the pericardial bag on the stretch, and this might readily set up a neurotic reflex. There could be no question as to the anatomical relationship of the heart with the pericardium and the nervous elements.

Dr. LUCAS BENHAM pointed out that the clergyman was stated to have suffered from asthma since birth, and he asked when it was supposed that the heart commenced to dilate.

Dr. KINGSCOTE, in reply, said he had only brought before the Society a number of cases in which the asthma had disappeared when the size of the heart had been reduced. Dr. Williams had admitted that he had no experience of the treatment—[Dr. WILLIAMS interjected that he only said

he had had no experience in the treatment of asthma by the Schott treatment]—and regarded asthma as neurosis. He himself did not dissent from this view, but if one cause of that neurosis could be shown to be pressure upon the vagus, that would establish a neurosis in many parts of the body. He did not hold that the disease always started from the heart: it might start from the medulla, from a gumma, or from syphilitic meningitis, &c. He had found oxygen inhalations do good in some cases, but not in all. He pointed out that iodide of potassium had a marked effect on arterial tension, and might therefore relieve the dilated heart and assist it in doing its work. He insisted on the fact that these dilated hearts were not recognisable by ordinary methods of percussion. He did not advocate the Nauheim treatment as a cure for asthma, but only in one class of cases in which there was reason to believe that the cause was pressure of a dilated heart upon the vagus.

April 25th, 1898.

THREE UNUSUAL CASES OF RENAL CALCULUS.

By WILLIAM HENRY BATTLE, F.R.C.S. Eng.

I HAVE thought that a short account of some unusual cases of renal calculus would be of interest to the Fellows of the Medical Society of London, and have selected three from amongst those which have been under my care during the past year or so. The surgeon is so frequently called upon at the present time to perform the operation of nephrolithotomy that the account of an ordinary case is no longer of interest excepting to the surgeon himself and the patient who is relieved of the stone. The cases which I have selected are as follows: (1) a case in which constant hæmaturia, although the patient was lying in bed, had persisted for some time unaccompanied by pain of a nature to permit of our diagnosing the site of the calculus; (2) one in which some pain in the kidney had persisted for 10 years without renal colic, but in which the symptoms made diagnosis easy: in this case the stone was of unusual formation; and (3) a case of acute pyonephrosis due to obstruction of the ureter, in which nephrotomy was required and a stone removed, subsequent exploration of the ureter performed, and later a pultaceous mass expelled per urethram, after which the lumbar wound closed.

CASE 1.—A woman, aged 44 years, was admitted to the Royal Free Hospital, under the care of Dr. Calvert, on January 4th, 1894. Five years before she had undergone abdominal section for the removal of uterine appendages, but otherwise, with the exception of symptoms of cardiac trouble, she had had nothing noteworthy in the way of illness. Six weeks before admission she had had a more severe attack of pain in the region of the heart than ever before, and a month ago she had noticed blood in the urine. It was dark in colour and there was a little pain after micturition. This had continued unchanged until admission. On admission she had pain and tenderness over the cardiac area, with evidences of hypertrophy of the heart and disease of the mitral valves. The urine was of a dark red colour and was acid, with a specific gravity of 1014; it contained blood, but no pus cells, casts, or crystals. The patient said that there was some pain on both sides of the spine in the lumbar region, and she complained of tenderness on pressure over both kidneys, but the kidneys could not be felt, nor was there any difference in the amount of resistance on the two sides. I saw the patient for the first time with Dr. Calvert on March 1st. There had been little change in the state of the urine since her admission to the hospital, although she had been kept in bed all the time. The urine had been acid and uniformly of a dark red tint. Many examinations had been made, and, although the quantity of blood corpuscles found did not quite account for the amount of coloration of the urine, there was no doubt of their presence, and in addition a varying amount of pus had been observed from time to time. Examinations for tubercle bacilli had yielded a negative result. She admitted that during some months she had suffered on and off from backache, but affirmed that this had not been more marked on one side of the spine than on the other. I recommended operation, but the patient did not agree to it, and a trial of hammamelis was made, but without appreciable effect on the bleeding until the dose had become about a drachm three times daily, when the urine cleared somewhat. During the next few days she had a good deal of backache and stated that the pain invariably began if she turned on her left side and started in the right side, being relieved if she turned on the right side or on her back. Before she gave consent to the operation, which was performed on July 7th, there had been but little improvement in the condition of the urine, although for a time the amount of blood passed appeared to almost disappear under the use of the hammamelis. The state of the heart was better, the pulse becoming more regular and less rapid, whilst there was less complaint of pain. Ether was administered and the operation was well borne. An incision was made through the old scar in the middle line and the kidneys were explored. The right one was larger than the left and contained a hard substance in its pelvis. The abdominal wound was therefore temporarily closed, the patient turned on the left side, and a stone removed from the right kidney through the loin in the usual manner. The substance of the kidney on its posterior aspect close to the pelvis was incised and the finger was inserted. The stone, which was very irregular, with one branch running at right angles to the main part and posteriorly, was extracted with some difficulty, as the forceps frequently slipped, in consequence of the crumbling of a layer which covered the surface. Altogether it measured about $2\frac{1}{2}$ inches in circumference, and was composed of a hard dark mass covered with a softer, greyish, friable layer of phosphates. The main portion was oxalate of lime. The upper

part of the kidney pelvis was dilated, but no change in the lining of the pelvis was apparent to account for the bleeding. The wounds were then closed, a drainage tube being inserted into the lumbar one. The left kidney was apparently normal. The weight of the calculus was $116\frac{1}{2}$ grains.

Recovery was slow, although there was nothing noteworthy as to the manner in which the wounds closed. At the end of a fortnight there were no blood corpuscles to be found on microscopical examination of the urine, but pus cells could still be found. During the early part of August she passed small fragments of calculus per urethram; this was probably the result of the crumbling of the phosphatic envelope of the main calculus when it was taken away at the operation, for considerable difficulty was experienced in clearing away the smaller pieces from the renal pelvis. The state of her heart necessitated her remaining in the hospital until the end of the year, and whilst under treatment she frequently complained of backache and pain across the loins, but it is very probable that much of this was neurotic, for as her health improved so the pain diminished. It was not easy to account for the hæmaturia in this case, for the amount of blood in the urine was considerable, it had persisted for some time, and it continued although the patient was kept strictly in bed. We agreed that the diagnosis was between calculus of the kidney and new growth. In favour of the former was the history of lumbar pain with on more than one occasion a paroxysmal attack, although nothing like renal colic was described. The absence of renal enlargement was in favour of this, and later the presence of an uncertain though always small amount of pus in the urine. It was not, however, possible to guess as to which kidney was affected, there being an almost complete absence of localising signs. I spoke to the patient about the pains in her back when she was convalescing from the operation, and said: "But you never had pain in the right side more than in the left"; to which she replied: "Oh, yes, I had." I asked: "When?" and the answer she made was: "Why, the night before the operation."

The only case of stone in the kidney with such excessive hæmaturia which has been under my personal observation was one associated with a villous tumour of the renal pelvis, and I ventured to diagnose tumour in addition to calculus, on account of the excessive hæmorrhage. It was hardly possible to exclude villous growth of the pelvis of the kidney without exploration, but the absence of the other signs of new growth made it evident that no malignant growth was present in this case.

CASE 2.—A woman, aged 21 years, was sent to be under my care at St. Thomas's Hospital from Rugby by my friend, Dr. Relton, and she was admitted on April 10th, 1897. She had been seen by Dr. Relton 10 years before for pain in the side and hæmaturia. He had diagnosed a renal calculus and recommended operation, but her parents had refused. She had never had severe pain nor did it at any time resemble renal colic, and she had been able to do her work regularly, but the pain was fairly constant, and of a dull, aching character, worse on exertion and when she was tired. Recently her parents had been

alarmed by three or four attacks of hæmaturia of rather more severe character which had compelled her to lay up. When 4 years old she had had jaundice, and had suffered from dysmenorrhœa for the last five years, but otherwise with this exception she has managed to do her work. The family history was good. When admitted to the hospital she was a healthy-looking girl of good colour, and complained of a dull, aching pain in the right side. Nothing abnormal could be felt in the abdomen. There was no tenderness over the kidney and no rigidity of muscles or undue fulness in the side. The urine was of specific gravity 1020, acid, clear, and pale, with a slight deposit of mucus; there was a very slight amount of albumen but no sugar. Dr. Blacker kindly examined the case in the X Ray Department with the screen, and made the following note: "Fluorescence extremely good; indistinct opacity was seen in the right upper half of the abdomen, marked towards the middle line, but no definite area of opacity was made out. The whole of the right side of the abdomen was darker than the left." When lying still she had no pain, but the visit to the X Ray Department caused her to complain again of it, but there was no blood in the urine. On the 26th there was still a fair trace of albumen, and the urine showed the presence of oxalate of lime and a few uric crystals on microscopical examination. There were also a few pus cells. On May 5th there was no albumen in the urine, and on that day I removed a calculus from the kidney through a lumbar incision. This calculus was felt on palpating the kidney to be placed in the upper part. An opening was made through the substance and the finger was passed into the pelvis of the organ. A very rough stone was felt in the upper part, which could not be dislodged with forceps until it had been actually dug out of the renal tissue by means of the forefinger and a director; it was embedded in the tissue of the posterior and upper part of the kidney, and its separation was attended and followed by a good deal of bleeding. The kidney was apparently quite normal. Afterwards for the first few days there was a good deal of blood in the urine, and the drainage tube which had been inserted after the operation was removed and the wound was plugged with cyanide gauze for five days. No suppuration followed, and the after-course of events was satisfactory excepting for the presence of blood in the urine. This, however, was found for a fortnight only, gradually disappearing. She left for her home on the 30th, and has continued well.

The stone which was removed was apparently divided into two parts, the smaller somewhat rounded part, to which torn renal tissue adhered, and the larger, which was almost of the size of a peach-stone and greatly resembled a dry one on the surface, the crystals being large and arranged in laterally opposed plates with sharp edges. It was a pure calcium oxalate stone.

This case is interesting from the peculiar arrangement of the oxalate crystals, which had caused the stone to assume a very uncommon appearance. This has been described by Mr. Shattock and Dr. Ord in their paper read before the Pathological Society of London, but is not mentioned in our text-books and is found in very few of our museums. Moreover, surgeons with large operative experience have not met with it. This case is additionally

interesting from the peculiar way in which the stone was held up in the kidney, which accounts, I think, for the absence of renal colic. Movement would jar the stone but would not dislodge it, and, although the history was of unusually long duration and the stone had reached a considerable size, there was no evidence of disease of other parts of the kidney. From the difficulty in separating the stone and from the fibrous character of the soft tissue which remained on the part of the stone which had been buried, as well as from the hæmorrhage attending its removal, I am of opinion that it had formed in the renal tissue and not in the pelvis or in a calyx.

I have here another oxalate of lime stone which I removed from one of the cases on which I operated last Wednesday. It resembled in appearance a miniature hen on a pedestal, the body of the bird being bent down as if pecking at something near its feet. The pedestal part, which is the smaller, was contained in a dilated calyx, whilst the narrow part was tightly nipped by the opening into the renal pelvis. The small calculus accompanying was in a cyst which communicated with the dilated calyx in which part of the larger stone was held. The patient, a young man, had had symptoms for many months, but had not had a definite renal colic.

CASE 3.—A girl, aged 17 years, was admitted under my care into St. Thomas's Hospital, on December 15th, 1894, suffering from severe pain in the right side of the abdomen. Two years before she had had an attack of pain in the right side and vomiting, followed by the passage of a small calculus, and she was ill for a week. Some months afterwards she had another similar attack, which passed off in a few days, but no calculus was passed on that occasion. The present illness commenced suddenly three days before admission, with severe pain in the right side of the abdomen and vomiting, which lasted until admission. There was no history of tubercle in the family, but her father had undergone the operation of nephrectomy for some disease of the kidney, the nature of which they did not know. The muscles on the right side of the abdomen were rigid, and much tenderness was complained of on palpation. A large swelling was present in the right lumbar region extending from the level of the anterior superior spine of the ilium to the under surface of the liver. There was absolute dulness in the flank, but the exact limits of the swelling could not be well defined on account of the acute tenderness. No fluctuation could be felt. The specific gravity of the urine was 1030; it was scanty, neutral in reaction, with some deposit of urates. The rapid course, large size, acute pain, and tenderness of the swelling, and its extension into the iliac fossa, made the question as to its origin in the appendix one to be considered, but it was thought most likely to be a pyonephrosis due to obstruction

of the ureter by calculus. Hot fomentations were applied, and the patient was kept quiet in bed on a liquid diet. Two days after admission the swelling was larger, better defined, and fluctuating. She was irritable, but inclined to sleep. The temperature was 102.4° F. There was now no vomiting. In the afternoon the kidney was exposed through a lumbar incision, tapped, and a large quantity of pus was evacuated. Through the enlarged opening an ovoid uric acid calculus, measuring 1 inch by $\frac{1}{2}$ inch, was extracted; it was lying loose in the abscess cavity. No other stone could be felt either in the kidney or the ureter, and it was considered inadvisable to make any prolonged search, although the opinion was held that the cause of the condition had not been found. This opinion was confirmed by the later progress of the case, for no blood appeared in the urine after operation, nor was its amount increased. The patient was much relieved as a result of this incision into the kidney, and urine escaped from the wound without any diminution in its quantity until February 5th, 1895. During the earlier part of this time there was an admixture of pus, but later it was almost normal. The quantity of urine passed by urethra varied from 10 ounces to 25 ounces in the 24 hours. A drainage tube had been kept in the loin wound as it was considered best to give the opening in the kidney a chance to heal before the soft parts. As the flow of urine did not diminish and the diagnosis was that a small calculus obstructed the ureter, exploration of the ureter was decided on and carried out on February 5th, through an incision in the right linea semilunaris. The ureter was traced from the renal pelvis down to the bladder. No stone could be felt, and the only thing that appeared unusual was a limited thickening, not well defined, where the ureter crossed the pelvic brim; above this the ureter appeared to be somewhat dilated, below it was apparently normal. The pelvis of the kidney was normal, and it was very interesting to find that the kidney itself had resumed its proper size and shape. Examination of the bladder after dilatation of the urethra with the finger yielded a negative result, as also did examination by the rectum. The wound was sutured in layers. Incontinence of urine followed and lasted for five days, but she suffered no further inconvenience from the examinations. As no calculus had been found in the urinary passages and obstruction continued, it was decided to try what pressure from above would do, and with this object the drainage tube was removed from the loin wound, which was allowed to close. No result was apparent until February 19th, when the patient complained of severe pain on micturition, and passed a pulpy mass of greyish colour, of the size of a hazel nut, with 11 ounces of urine. In less than three hours' time 18 ounces were passed without pain. The wound in the loin rapidly closed, the quantity of urine passed daily was natural, there was no pus in it, and the patient was able to leave the hospital on February 24th and has continued well since.

The history of old attacks of renal colic made it appear probable that the case was one of blocking of the ureter by a calculus and the formation of an acute pyonephrosis. At all events, it appeared probable that the sudden onset of symptoms indicated an obstruction of the ureter from within, and when at the first operation the only stone found was in the abscess cavity

and not definitely in the pelvis of the kidney or entrance of the ureter, when the urine from the affected kidney all came through the lumbar wound and it was evident that the obstruction continued, exploration was clearly indicated. The result of this being negative as regards calculus made it probable that the block was caused by some softer substance, but the condition of the ureter as found at the second operation did not help very much in the clearing up of this point. The complete recovery from such a large pyonephrosis is also noteworthy, for the kidney was apparently normal when examined on February 5th through the abdominal incision.

Dr. HOLMAN (the Vice-President, in the chair) observed that these cases were very interesting, especially to those among them who could recall the intense antagonism which existed a quarter of a century or more ago against all abdominal operations. One could only rejoice that surgeons had so much improved their methods as to admit of these operations on the kidneys, &c. He related an interesting case under his own observation. The patient had come to him 14 years since with myxœdema, his own diagnosis being subsequently confirmed by Dr. Ord. When he saw her again five years ago she exhibited the symptoms of myxœdema in a very marked degree, and he had put her on the thyroid treatment, under which all her symptoms cleared up and she was enabled to resume social life. Soon after beginning the thyroid treatment it was noticed that she was passing some blood in the urine, and from time to time a little pus. There had been no special pain, but on examining her more carefully he thought he could make out a little more tenderness over the right kidney, which was possibly a little larger than the other. When this condition of the kidney was first noticed he was puzzled to know whether he had to do with a kidney undergoing the degenerative process of myxœdema, but the pain soon became more marked and was localised in the right kidney. This gradually got worse, though her general condition as regards the myxœdema was markedly improving. After an acute attack of pain in June, 1897, he was surprised to find that the blood and pus had entirely disappeared from the urine, and this he attributed to the calculus having dropped out of the kidney into the ureter. That diagnosis was confirmed by the fact that an abscess of the kidney formed. Having learned that the extraction of a tooth had been followed by violent hæmorrhage, he felt somewhat unwilling to advise surgical interference. Sir Thomas Smith saw the case and said that in his experience myxœdematous patients bore the knife well, and as Sir Thomas was leaving town Mr. Walsham was requested to operate. The abscess was therefore opened and diligent search made for the stone, but without success. The operation was followed by an excellent recovery. In February, 1898, a long probe was passed into the ureter in order to explore, and a hard, grating body was distinctly passed by the probe. The patient was at present well except that she continued to pass a large quantity of urine through the drainage tube, and the removal of the calculus was under contemplation. He pointed out that it was rare to find a myxœdematous patient who had calculus followed by abscess formation making such a satisfactory recovery.

Mr. BRUCE CLARKE said he had long felt the necessity of passing some sort of instrument down the ureter at the time of operation. More than once he had thus detected a stone some little distance down the ureter and had been able to remove it. He had never yet come across a stone which was out of reach, but this might, he admitted, be merely his good fortune. It was, as a rule, easy enough to detect the obstruction. He thought the best instrument for the purpose was a No. 6 rubber bougie. He advocated methodical resort to this means of investigation, and he pointed out that in women particularly it was generally possible to explore the upper 5 or 6 inches of the ureter from the lumbar wound. He thought the severity of the hæmaturia depended partly on the kind of stone and partly on its position. In some cases there was reason to suspect that owing to its shape or otherwise the stone exerted injurious effects on one of the kidney vessels. He could recall several cases of copious hæmaturia in which this appeared to have been the case, and which were quite unconnected with any kidney growth.

Mr. MARMADUKE SHEILD observed that the principal question before them was the diagnosis of renal calculus, for they were all pretty well agreed as to the treatment. He asked the author what had been their experience at St. Thomas's Hospital with the X rays in the detection of renal calculus. He had heard it asserted by some that calculi could thus be detected, while others asserted that this method of exploration was of no value in such cases. Then, too, as to the differential diagnosis of renal calculus and tubercle. That was always a puzzling question. He asked whether the author had had any experience of the method of inoculating animals with suspected urine, and whether he laid any stress upon it. It was a method which had received strong support, and if trustworthy it would prove of great assistance to surgeons in these cases. He added that he had tried it in one case by injecting urine into the peritoneal cavity of a rabbit, and the whole peritoneum had produced multiple tuberculous growths. It had been largely used in Germany, and he thought it was worthy of a trial in hospitals.

Dr. HEDLEY said he had recently seen an excellent radiograph of a renal calculus, about the size of the distal joint of the thumb. The patient had been a soldier.

Mr. BATTLE, in reply, observed that the President's case was as rare as it was interesting. He remembered that when house physician to Dr. Ord some years ago he had been called upon to make incisions in one or two cases of myxœdema, and they never presented the slightest difficulty in regard to the bleeding. He had tried to pass something down the ureter, but was unable to find the opening into the ureter owing to the changed condition of the parts. He had brought forward his first case principally on account of the abundance of the hæmaturia and its persistence, even when the patient was at rest in bed, a very unusual occurrence in his experience. The stone was fairly large, was composed of oxalate of lime, and had an irregular surface covered with phosphatic deposit, a sort of stone which was often associated with severe intermittent hæmorrhage. He had hoped for some remarks from the surgeons present in respect of the shape of the stone in the second case, which appeared to be very common. In reference to this case he pointed out that though the stone was far more rough and irritating than in the first case, yet the amount of bleeding was quite small. That seemed to be due to the fact that it was held up by its attachment in the renal substance. Their experience with the X rays in the diagnosis of renal

stone at St. Thomas's had been unsatisfactory. One obtained sometimes a dull black outline, but nothing definite enough to act upon. The urine in the first case had been bacteriologically examined for the bacillus of tubercle, but nothing was found. He had had no experience with the inoculation method.

THE THERAPEUTIC VALUE OF CENTRAL GALVANISATION IN CARDIAC AND OTHER NEUROSES.

By WM. ARMSTRONG, M.R.C.S. (Buxton).

PARTLY deservedly, partly undeservedly, the application of galvanism to the central nervous system has during recent years been somewhat discredited. This has in great part been due to four factors :—(1) Want of precision in application and failure to estimate the exact dosage administered ; (2) its use as a last resort in absolutely hopeless cases ; (3) the extravagant claims sometimes made for it ; (4) the blatant quackery with which it has so often been associated. My own experience has shown me, however, that it has a place in practical medicine, and I therefore venture to submit certain data to your criticism, and the more searching and severe that criticism is the more helpful it will be to me.

I approach this subject not from the standpoint of a specialist in electrical treatment, to which position I have no claim, but rather from that of a practitioner who has from time to time cases submitted to him for treatment which have resisted all the efforts of ordinary medicine. I may say that not more than two or three per cent. of the cases passing through my hands require the use of this method, but those that do are, almost without exception, refractory ones, and the test has, therefore, been a severe one.

I would put in an earnest plea for the scientific use of central galvanisation. I am convinced that careful, conscientious work, followed by a faithful record of actual results obtained, is doing for this method what it has done for others, viz., lifting it from the vale of speculation and placing it upon the substantial foundation of accomplished fact. Its best friends are, I am certain, not those who exaggerate its value but rather those who hold that it has only a limited sphere of usefulness like any other remedy ; but it may be claimed that while its sphere is limited its effects are definite, and within certain bounds fairly certain.

It is constantly urged against treatment by electricity that its successes are due not to the therapeutic effects of the method, but rather to the influence of what is known as "suggestion." This very convenient expression, which has the advantage of being quite "up to date," is largely made use of by what I may perhaps, without offence, be allowed to call the agnostic section of our profession. I hope, however, to show in this paper that there are more definite factors than suggestion at work, although I admit that many cases of hysteria are benefited by the mental impression made by the sight and use of more or less complicated and unfamiliar apparatus. Although in America and on the Continent systematic treatment by electricity is more largely carried on than with us, still it should not be forgotten how much more valuable scientific work has been done in this country by our President, by Dr. Julius Althaus, Dr. Lewis Jones, Dr. Herschell, Dr. Hedley, and by my lamented friend, the late Dr. Cagney.

The physiological effects of the constant current may be put down as threefold—(1) Stimulating; (2) sedative; (3) tonic. These effects are not as a rule distinct but run into each other.

The stimulating effect is believed by many to be the only one; it is the most immediate, it is true, but is followed more or less quickly by the sedative action, the tonic effect coming on more slowly. Appetite is improved and digestion quickened, and there is soon apparent a bracing effect on the nervous system, particularly upon those portions connected with the medulla and the sympathetic. Modification of the method of application and variation of the dosage will cause either the stimulating or the sedative effect to predominate. But most important of all is the direct effect upon nutrition. Niemeyer says: "In the constant current we have a means more powerful than any other of modifying the nutrition of parts that are deeply situated."

During the passage of the current through the body a certain amount of heat is generated, and there is a transference from one pole to the other, a modification of the functions, endosmose and exosmose, and a marked acceleration of the process of oxidation. Secretion being largely governed by the vaso-motor branches of the sympathetic, both directly and also through their control of the calibre of the blood vessels, might reasonably be expected to be influenced by this method. The salivary and gastric secretions

as shown in cases of "dry mouth" and certain forms of dyspepsia are augmented, and I have proved that in those gouty cases where there is not so much an increase in the amount of uric acid and urea formed, as a failure to excrete the normal quantity, central galvanisation has caused a marked increase in the excretion of both those bodies. The structures which it is desirable to bring under the influence of the current are mainly the medulla, the pneumogastric nerves, and the sympathetic system, and with this object in view different observers have adopted various methods of application.

The direct method, in which the anode is placed on one temple, or mastoid process, and the kathode on the opposite one, has in some skilled hands given excellent results; but in a certain proportion of cases even a very small current so applied is apt to give rise to much vertigo and even sickness, for which reason I rarely adopt this method.

The most important feature of the "Rockwell" method is the application of the kathode (the pole which gives rise to the troublesome cerebral symptoms) to some indifferent parts, most frequently over the epigastrium or to the lower part of the spine. Vertigo and other unpleasant symptoms are very rarely caused even when fairly strong currents are used. The Rockwell application may be either *stabile* or *labile*—in using the *stabile* form a light wire-gauze headpiece, lined with a soft well-wetted pad, is used, or else a large flat electrode. With the former the whole of the head can be submitted to the current at one time; with the latter application of the anode has to be made successively to the forehead, vertex, and the nape of the neck. In either instance the sitting is completed by the sub-aural galvanisation, in which the kathode is placed just below each ear in turn and the anode at the opposite side of the fifth, sixth, and seventh cervical vertebræ, with the intention of influencing the cilio-spinal centre. In the *labile* method the kathode is again placed on some indifferent part, while the anode is gently moved over the forehead, top of head, back of neck, down the inner border of the sterno-cleido mastoid muscle, and along the whole length of the spine. In this application the anode must, when moving, be constantly kept in close contact with the surface. My own preference is for the *stabile* method—in some cases with the wire headpiece, in others with the movable pads.

Appliances.—Any ordinary constant current battery of from 20 cells upwards does very well, a double collector being an advantage. A thoroughly reliable galvanometer, indicating tenths of a milliampère, is necessary and also a good rheostat, without which central galvanisation should not be applied. Dr. Herschell showed me, a few days ago, the most efficient rheostat I have ever seen, and I hope he will speak of it to-night. It puts the current on and off most gradually and steadily—a most important point, for it is an *absolute* necessity that all shock should be avoided. The connections and wires require to be kept in perfect order and repair. The pads for application to the head require to be large and well-fitting and also sufficiently flexible to mould themselves to the parts; by this means fairly large currents can be used with comfort.

The strength of the current should be from 1 to 20 milliampères. The forehead, top of the head, and the sub-aural region are the most sensitive parts, so my usual plan is to apply in the first instance from 1 to 5 milliampères only, and increase the current gradually. The upper part of the spine, the sides of the neck, and especially the lower part of the spinal column stand larger currents, up to 20 or more milliampères. The duration of each sitting is from 10 to 30 minutes; these may be repeated three or four times in each week, and in some cases even daily.

I do not for one moment pretend that there are no cases in which disagreeable effects are experienced from the use of central galvanisation. Such results show themselves if the patient is unduly sensitive to electrical treatment, if the application is too long, too strong, or incorrectly given. The following symptoms show themselves after the applications and demand special care and watchfulness:—Headache, irritability and insomnia, sickness, nausea, general malaise, over excited pulse, profuse perspiration, hyperæsthesia, prolonged reaction of any of the nerves of special sense.

It must not be forgotten that neurotic patients are often especially sensitive to the action of electricity, and also that those suffering from affections of the sympathetic system can only bear the mildest applications of sub-aural galvanisation. I have been greatly interested in finding that in such cases one side is nearly always more sensitive than the other.

Cases presenting the following symptoms are suitable for

treatment:—(1) Cardiac and gastric neuroses; (2) neurasthenia and hypochondriasis; (3) cerebral and nervous exhaustion; (4) migraine; (5) exophthalmic goitre; (6) Raynaud's disease; (7) spasmodic asthma. I would, however, lay stress upon the necessity before commencing treatment for careful elimination of all reflex sources of irritation, especially in cases of cardiac neuroses, migraine, and asthma. It is of little use treating the central nervous system if it is allowed to be continually irritated from without.

THERAPEUTIC EFFECTS.

The general effect of the application of central galvanisation is to induce a feeling of better health; patients constantly speak of feeling brighter and lighter, of clearer power of thought, and of improving memory, appetite, and digestion, and the general appearance becomes more healthy. The bowels are regulated, and in those cases in which urea and uric acid are not being passed in normal quantities the excretion is increased; while on the other hand indican, skatol, cresol, oxalates, and phosphates show a marked decrease, due probably to the effects upon the nerves supplying the stomach and duodenum. Insomnia is often much relieved, and the actual sleep becomes calm and refreshing.

I think it will be generally admitted that no cases are at once so troublesome and so difficult to cure as cardiac neurosis, where, although there is no organic disease, the patient is kept in a constant state of unrest by various symptoms referred to the cardiac region, among which are irregularity, intermittency, anginoid attacks, tachycardia, and brachycardia. While most of these are dependent upon the reflex sources of irritation, such as flatulence, gastric or intestinal dilatation, absorption of gastro-duodenal toxins, nasal irritation, &c., still there are some which are dependent solely upon the condition of the cerebral nervous system, and those that are not owe not a little of their origin to an unstable condition of the higher nerve centres; for instance, many people suffer from flatulent distention either of the stomach or transverse colon, and how small is the percentage of those whose cardiac stability is upset? Many of these cases undeniably get better by ordinary means, such as the combating of the various sources of reflex irritation, change of air and scene, and other nervine tonics, medicinal and otherwise: but there is a certain minority that is but little relieved by the means

mentioned, however skilfully prescribed, and it is to that minority I am drawing attention.

The effects of the application of central galvanisation in these cases is a steadying of the action of the heart; it becomes firmer and more regular, and is not upset by such slight causes as formerly. The pulse gradually comes nearer and nearer to the normal. Many cases of gastralgia and other gastric neuroses, more especially when occurring in neurasthenic subjects, have been greatly helped by the application of the constant current to the nerve centres.

Neurasthenia—that word covering such a multitude of diverse symptoms—is much relieved by this process, and is it not wonderful when we consider how many of these cases suffer from auto-intoxication? A vicious circle is formed. Under anxiety or strain, and frequently following influenza, there is a loss of power in the nerve supply to the digestive organs, and the more subtle processes of digestion and assimilation fail. Morbid products form, are observed, and in turn react upon the nerve centres. The problem seems to me to be, Where are we to break through this vicious circle? and I say without hesitation that the central nervous system should be attacked in the first instance. I have seen a number of cases where neurasthenia, hypochondriasis, and cerebral exhaustion of long standing have been dispersed by the use of central galvanisation. There is a return of power, both mental and physical, and the memory improves, and the whole of the vital processes are carried on in a more satisfactory manner.

Migraine is not in my experience benefited by applications during the attack, but given the elimination of reflex sources of irritation a course of treatment between the attacks has often done good, and in several very severe cases brilliant results have been shown.

I have seen several very successful cases of exophthalmic goitre. The rapid pulse, protrusion of the eyeballs, thyroid enlargement, muscular tremors, and incapacity for mental work have all much improved. This improvement has in every case been maintained, in one instance for more than two years.

I consider that much better results are obtained by the central method than by the application to the sides of the neck only, although I have seen several cases treated in the latter way do well.

In two cases of Raynaud's disease the sudden blindness of one eye and the cardiac spasm have disappeared and the "dead hands" have resumed their normal appearance.

Spasmodic asthma after and even during the elimination of the causes of reflex irritation has done very well, a considerable number of cases, and those the most intractable, having been greatly helped. I am aware that there have been many failures in the galvanic treatment of spasmodic asthma, but in several such cases I know that the want of success has been due to neglecting to remove sources of irritation in the nasal cavities, for when this has been done some of the cases have at once recovered without further treatment, and those that have not have rapidly got well under central galvanisation. Two cases of "dry mouth" which had resisted all other treatment have greatly improved under galvanic treatment.

CARDIAC NEUROSIS, FOLLOWING INFLUENZA.

Miss D., aged 29 years, after influenza one year before treatment, began to suffer from cardiac irregularity; no murmur or dilatation. No dyspepsia or flatulent distention. Feeling of great distress, as if the heart were swollen, and altogether too large for the thorax. Had been under treatment by Nauheim baths and resisted exercises for eight weeks, which treatment finished four months before I saw her, and was followed by no improvement. I treated her by central galvanisation four times a week for six weeks, and then twice a week for three weeks. Quite well now for 12 months; saw her last week.

CARDIAC NEUROSIS, FOLLOWING MENTAL STRAIN: TACHYCARDIA.

Mr. M., aged 58, an active business man, who, after going through a period of exceptional strain 16 months before I saw him, developed a very rapid pulse, with muscular tremors and some defect of memory. He had been for more than a year under skilled medical care. He had taken the various cardiac and nervine tonics without success. He was sent to me early last year. His pulse rate was never below 115 per minute, and was sometimes as high as 130. He was treated by central galvanisation for eight weeks. The pulse gradually fell, and at the end of the course it was 78. I heard from him last week to the effect that he remained quite well, and was controlling a large and anxious business.

PSEUDO-ANGINA, PROBABLY AUTO-INTOXICATION, FROM DUODENAL FERMENTATION.

Mr. B., aged 54, came to me a year ago suffering from sudden attacks of spasmodic pain about the region of the heart. This pain extended down both arms, and he thought he was suffering from true angina. As, however, the pain was not brought on by exertion or by walking

sharply uphill, and as it had been going on more or less daily for two years without becoming worse, I thought it was probably due to some reflex cause. I found he was passing large quantities of indican, skatol, and cresol, pointing to duodenal fermentation and probably auto-poisoning, so I put him on a careful dietary, gave him an occasional grain dose of calomel as a duodenal disinfectant, and ordered him some Nauheim baths; after a month of this treatment he had certainly improved, and I sent him home, expecting this improvement would continue, but after three weeks he returned as bad as ever. I then gave him three weeks' central galvanisation, six sittings per week. The indican and other toxins rapidly decreased, the pains disappeared, and he went away once more, much improved. His long absence from his work as an important public official had caused many important matters to accumulate, and he had at once to take up very hard work. I quite expected him to break down, but the improvement continued, and a fortnight ago he reported himself as having been quite well for several months.

CARDIAC IRREGULARITY, DUE PROBABLY TO DISTENTION OF THE TRANSVERSE COLON.

Mr. C., aged 64, saw me two years ago with the most irregular cardiac action I have ever known; the heart was continually going through the most extraordinary gymnastics. He had marked distention of the transverse colon, and suffered greatly from flatulence. He had a great objection to the galvanisation, so I treated his dyspepsia and his general nervous system for three weeks without the slightest improvement being manifested. At the end of that time he consented to galvanic treatment being tried, telling me, however, that he had not the slightest faith in its efficacy, and prophesying its utter failure. In a fortnight, however, he had greatly improved, and in six weeks was almost well. I have never seen him since, but on inquiry for the purpose of this paper learn that he has had no return of the trouble.

GASTRIC NEUROSIS: GASTRALGIA.

Mr. A., aged 55 years, after several years of great business and domestic anxiety, developed very severe gastric pain, evidently of a neuralgic character; this came on at irregular intervals, and was apparently not connected with the digestive process. Prolonged treatment for dyspepsia had failed to relieve him. There was no local change to be found on palpation or percussion of the epigastrium. The pain was very severe in character, and, taken together with much failure of nutrition, had led to a suspicion of malignancy. I treated him for a fortnight by the Scottish spinal douche (hot and cold alternately) and with packs of mustard bran to the cervical ganglia of the sympathetic and over the solar plexus, without any result. After a fortnight of this treatment I gave him the galvanism, and he at once began to improve, not only as regards the pain, but also as to his general health, and after a month's treatment was practically well. That was three years ago; 12 months ago he had a slight relapse after influenza, but was again sent to me, and after three weeks' treatment became quite well, and still remains so.

CEREBRAL EXHAUSTION.

Mrs. F., aged 63, a lady of most active habits, a brilliant conversationalist, an excellent chess player, and absolutely free from any signs of hysteria, after undergoing terrible mental agony, gradually developed a curious set of symptoms. While talking brilliantly she would suddenly stop because her ideas absolutely left her; in playing chess with her usual skill for half an hour or so, she would be quite unable to make another move; and in walking she would at once have to sit down, even on the sidewalk. She was apparently in perfect health, her only complaint being a sudden feeling of weakness, or "want," as she described it, at the top of the head, between the ears. She had resisted most skilled special treatment. I put her on the galvanic treatment, telling her that I had never had a similar case and could not promise more than to do my best. In eight weeks she was quite well, came up to her town house, and entertained largely, without relapse. She remains quite well, although over three years have passed and she has been greatly tried in various ways. I look upon the case as one of true cerebral exhaustion.

EXOPHTHALMIC GOITRE.

Miss N., aged 30, had suffered from exophthalmic goitre for three years. She had a very rapid pulse, most prominent eyeballs, a large thyroid enlargement with loud bruit, muscular tremors, and a tendency to mental confusion. When I saw her she was evidently getting worse, as she was just developing that persistent vomiting which is so deadly in these cases. For two years she had been under treatment. Two courses of Nauheim baths and resisted exercises; a course of 10 weeks' duration of strict Weir-Mitchellism, thymus- and thyroid- extracts, and every likely drug in the Pharmacopœia. I confess I thought the case was hopeless, but her mental distress was so great that I promised to try the galvanism, warning her, however, that I could not promise any definite improvement. As some of her symptoms pointed to the brain itself, I chose the central method instead of making the application to the pneumogastric and the sympathetic only, thinking that the greater would include the less. After the second week she began to improve, and at the end of six weeks was much better in every way. I then advised her to go home for six weeks. When she returned she was just as she had left, neither better nor worse. I gave her another six weeks' course, under which she still further improved, and ever since has been following her occupation, that of head-mistress of a higher grade school. I treated her in the summer and autumn of 1896. In October, 1897, I saw her and found her practically well; the eyes were almost normal, the thyroid was about half its size, the bruit had disappeared, her mental faculties were quite clear, and she had lost her muscular tremors. Three weeks ago she reported herself as quite well.

Did time permit I could mention several cases of migraine and asthma, two cases of "dry mouth," and one of diabetes insipidus much benefited.

In conclusion I can only repeat my strong conviction that this method has a place, if but a limited one, in the treatment of

disease. Used in the way I suggest it is free from pain or any other discomfort. Given good apparatus, which is not very costly, it can be used by any practitioner who will take the trouble to master the details of the apparatus and who will give the necessary time and care.

I am deeply conscious of the fragmentary and incomplete character of this paper, which I can only excuse on the ground that it is simply a record of clinical facts and observations, and in no sense the work of an expert.

Dr. HERSCHELL said he had used central galvanisation in his practice for the last 10 years and concurred in the author's views respecting its efficacy in removing certain neurasthenic conditions. Personally, he had made use of it principally for the symptoms which followed auto-intoxications arising from the gastro-intestinal tract. Having washed out the stomach or flushed the colon he had used central galvanisation to remove the effects. He had at times entirely relinquished the use of galvanisation but had always come back to it again. He did not employ exactly the same method as the author. His own method was purely empirical. He did not apply the current directly to the head but placed the negative pole on the epigastrium and the positive pole on the nape of the neck, sending a current of some 15 milliampères for 10 minutes. Then he removed the electrode from the back of the neck and applied it in succession to the sides of the neck on the upper and middle cervical ganglia of the sympathetic, and this treatment had given him the best results. He thought that giddiness during the application was caused by the use of a dial collector which he had long since discarded because the addition of even a cell at a time would give rise to a slight shock which would produce giddiness when applied over the sympathetic in a specially sensitive individual. He himself employed a special rheostat which he had obtained from America—Willon's current controller—and had his cells connected in series. The contacts of the rheostat were so arranged as not to wear away the graphite. He thought that failure with this method was often due to the fact that it was not persevered with long enough. He usually gave it for 12 or 15 days before any result was obtained, and never longer than five weeks in any one course. He recalled a case of asthma due to nasal obstruction which was always relieved by the application of the current to the neck, although the source of the trouble had not yet been removed.

Dr. LEWIS JONES thought that general electrification, as opposed to localised, was gaining ground, and he urged that it unquestionably produced marked effects on general nutrition. As an example of a simple form of malnutrition in which its good effects could be easily recognised he would instance rickets. Cases of this disease, in which infantile paralysis had been suspected, had several times come under his observation. It had been most striking to witness the way in which their condition improved under simple electrical stimulation even without change of diet. Another form of malnutrition, in which the good effects of electricity could be easily recognised, was in chilblains. Personally, he preferred the electric bath, using the sinusoidal current from the mains when this was obtainable. On the whole he thought the general

applications of electricity were a very valuable therapeutic measure, and he preferred to regard the methods of Mr. Armstrong as one mode out of many of producing good effects by general electrification.

Dr. BERTRAM ABRAHAMS regretted that the subject of the general application of electricity had been brought forward under circumstances which did not ensure the presence of experts. He pointed out that there was as much difference between local galvanisation and the general application of a sinusoidal current in an electric bath as between wet packing and a Turkish bath. The broad and simple method of galvanisation had been almost completely abandoned abroad, and they now employed much more complicated and ornate apparatus, and he observed that an operator accustomed to the procedures of such a master as d'Arsonval would regard the direct turning on of a current to the head for the purpose of stimulating the sympathetic as a barbarism. The whole question of the employment of electricity might, he thought, be resolved into two subjects, viz.: (1) General medical treatment, *i.e.*, general tonic electrification, and (2) local electrification for surgical purposes. Those who read such publications as the 'Archives d'Électricité Médicale' or the 'Annales d'Electro-Biologie' would notice the large proportion of surgical cases, especially urethral, which were treated. He referred to the treatment of a case of incontinence of urine by Morton's method of static induction. Electrical treatment, he said, had never been systematically taken up in England by any body of medical men, but he thought it was one which required very careful study before one could form an opinion. He asked what connection the cilio spinal centre had with cardiac neurosis as referred to by the author.

Dr. HEDLEY thought that most of those who had used the constant current in functional disorders of the nervous centres had had reason to be satisfied with the result. He did not think the method deserved to be looked down upon even in presence of the high tension currents, which, although their physiological effects seemed fairly well proved, had not yet quite established their position in therapeutics. He said the effect of electrification was often unmistakable. For instance, if the anode be placed over a painful nerve the pain is relieved, while if, unknown to the patient, the other pole be substituted the pain is increased. Galvanisation would measurably increase the excitability of a muscle. Neurasthenic conditions were notably improved by central galvanisation. He took exception to neurasthenia being classed with hypochondriasis in the syllabus of Mr. Armstrong's paper. The two conditions were quite distinct, and they differed in their amenability to treatment. It was premature to discuss the *modus operandi* of galvanisation until more was known of the human body as an electrical conductor.

Mr. ARMSTRONG, in reply, expressed his great pleasure that Drs. Herschell, Lewis Jones, and Hedley concurred in the general principles he had laid down, although their mode of application differed in detail from the one he had used. His experience confirmed that of Dr. Lewis Jones concerning the value of the alternating bath in rickets and chilblains. Dr. Abrahams, in accusing them of using methods as diametrically opposed as a Turkish and a cold bath, must surely have forgotten how much action was reflected from the peripheral nerves, and from the spinal sympathetic centres to the brain itself. Dr. Lewis Jones used the former method, and Dr. Herschell the latter. With regard to the smallness of dosage in central galvanisation compared with that of the d'Arsonval current, it must not be forgotten that in the former the *whole*

current passed through the centres; in the latter probably but a small portion reached them, and that indirectly. The suggestion that the best Continental methods were entirely neglected in England was disproved by the fact that he himself was largely using the d'Arsonval or sinusoidal current mentioned; but while most valuable in many cases he had found it much inferior to the central treatment in the class of cases named.

May 9th, 1898.

THE TREATMENT OF TUBERCULOUS DISEASE OF THE BLADDER.

By C. MANSELL MOULLIN, F.R.C.S. Eng.

I HAVE ventured, Mr. President, to bring the subject of the treatment of tuberculous disease of the bladder before the Medical Society to-night, because I cannot help thinking, and in this at least I believe most will agree with me, that the results obtained by our present methods are very far from satisfactory, and that the time has come when we should take into serious consideration the question whether it is not advisable to adopt, in some at least of the cases, a more active and energetic line; in other words, attempt to effect a radical cure by removing the tuberculous growth through a suprapubic opening. As advised at present, the treatment of tuberculous cystitis consists almost entirely of constitutional measures. Local applications are condemned on various grounds. They increase the risk of septic cystitis. They may help to extend the tuberculous disease by the way in which the instruments that are used bruise and injure the still healthy mucous membrane. And they are of very little use—they never reach their aim. No injection into the bladder can really affect the tissues that lie at the base of a tuberculous ulcer. The bacilli are much too well protected by the depth at which they grow and by the coating of caseous *débris* and urinary salts that nearly always covers in and conceals the floor.

With regard to the constitutional treatment I have nothing to say. It is difficult to speak too highly of it or to exaggerate its importance, and I am sure that in every case it should be given

a fair and thorough trial, whether anything local is done or not. In several instances under my own care the necessity for doing anything further has disappeared. But it is no less a fact that constitutional measures do not always succeed, and that in a large proportion of cases they are not practicable. It is not everyone who can afford to winter in Egypt, or even to spend months in England, living in the open air in some specially selected place along the south coast. For such as these, as matters stand at present, there is nothing to be done. Their only hope is in local treatment, and there is no local treatment that is of any use. Drainage can at best be only regarded as a palliative measure. Very often it makes matters worse, as the track of the drainage tube itself becomes infected. They must be left until septic cystitis sets in, and either they are worn out by constant pain and suffering, or the kidneys become hopelessly diseased. The question that I wish to suggest to-night is whether some of these cases might not be relieved and perhaps even cured by adopting much more energetic measures at a much earlier date; whether, in short, the local treatment of tuberculous cystitis has not fallen into its present state of disrepute because it has been too feeble and too late.

The arguments that are always brought forward against suprapubic cystotomy and eradication or excision of the tuberculous growth are that the operation is a very serious one, that removal of the growth is almost impossible, and that even when it is possible to remove it, so far as the bladder is concerned, it is of little or no use, because the growth in the bladder is nearly always secondary to disease elsewhere. The first two of these statements I feel I do not need to deal with here. Suprapubic cystotomy, performed with ordinary precautions, is an operation practically unattended with risk. The mortality due to the operation, apart from that which arises from the causes that render the operation necessary, is almost nil. And removal of the growth through a suprapubic opening is certainly not impossible. It may be difficult sometimes, especially in those cases in which, instead of there being one or two ulcers in the neighbourhood of the trigone, there is a profuse, exuberant growth of granulations covering a large portion of the interior of the bladder. But the difficulty in those cases arises from the diagnosis having been made too late. It ought to have been

made long before this stage was reached. Tuberculous cystitis is very rarely latent; nearly always it is attended from its earliest days by irritability of the bladder and occasional hæmaturia; and any case that presents symptoms of this kind, coming on without a definite reason, and lasting for more than a few days, should be submitted to a thorough investigation. The cystoscope enables ulceration of the bladder to be detected at once, and if there are any tubercle bacilli present in the deposit they can almost certainly be collected for examination, even when the amount is all but microscopic, by the aid of the centrifugal machine. Tuberculous disease of the bladder at its beginning, when the diagnosis should be made, is an entirely different thing from tuberculous disease as seen in *post-mortem* and museum specimens. These in this respect are a most fallacious guide. All they prove is that, when the disease has reached a stage that is incompatible with life, it has passed beyond the limits within which it would have been removed by operation.

The third argument, however, that ulceration of the bladder, when due to tubercle, is nearly always secondary to disease in some neighbouring organ, requires more consideration.

So far as tubercle bacilli are concerned, the mucous membrane of the bladder is probably always infected through the medium of the blood vessels or the lymphatics. The epithelium lining the interior, unless it is injured in some way, is an efficient protection. I have many times known cases of advanced tuberculous nephritis in which the bladder has remained intact in spite of myriads of tubercle bacilli passing through it in a constant stream. Even in cases of advanced cystitis, when numerous fresh points of infection are present upon the surface of the mucous membrane, suggesting from their distribution that inoculation is due to contact, it is much more probable that the disease has spread along some of the numerous lymphatics that run in the mucous and submucous layers. It is almost certain, therefore, that when tuberculous cystitis is secondary the infection spreads either by direct continuity or through the medium of the lymphatic system.

The bladder may be infected either from the kidneys or from the genital organs. In the case of tuberculous pyelitis the route is comparatively easy. There is free communication between the lymphatics of the pelvis of the kidney and those of the ureter;

and again between those of the ureter and those of the trigone of the bladder, so that the bacilli can spread from the kidney to the bladder without necessarily infecting the ureter. Nearly always when this takes place, the first part of the bladder to be infected is the immediate neighbourhood of the orifice of the ureter; and I am bound to admit that when the first appearance of tuberculous ulceration is close to one of these openings, and particularly when it involves the opening itself, the presumption is in favour of the cystitis being secondary and of the existence of tuberculous pyelitis. In such circumstances it would be necessary to prove that the kidney was sound before treating the disease in the bladder as if it were primary. Whether in a case of unilateral tuberculous pyelitis the infection of the bladder would be a bar to operation is another question. The whole length of the ureter has been removed, and it does not seem that it would increase the gravity of the operation very seriously if either then or at some later time the portion of the bladder that was diseased were removed as well. But when the disease begins in other portions of the bladder, or even in other portions of the trigone, I do not think that the same conclusion is in any way necessary. It is often assumed that infection can proceed as easily from the genital organs as from the pelvis of the kidney. But I am strongly disposed to believe that the frequency with which the bladder becomes involved from this source is very much exaggerated. In the case of women it certainly is. Tuberculous disease of that part of the female generative organs which is in relation with the bladder is by no means of common occurrence. When tuberculous cystitis breaks out in women it is nearly always either primary or secondary to tuberculous pyelitis; and though it is more difficult to prove, I believe the same thing is true of men also. Certainly the proportion of men with tuberculous epididymitis who subsequently become the victims of tuberculous cystitis is a very small one; and in those in whom this complication does set in, it is nearly always caused by direct extension along the ejaculatory ducts into the prostate, and the bladder is involved much later.

It is not fair to argue, as is often done, that because tubercle makes its appearance more frequently in the trigone of the bladder than it does in other parts, and the trigone is in close anatomical relation with some of the genital organs, the infection is therefore

secondary. The reason why the trigone is affected so much more frequently than other portions of the bladder is that the neighbourhood of the neck of the bladder is the most important part physiologically, and has the largest blood supply. Tubercle bacilli attack it for the same reason that they attack the epiphysial line of a growing bone more frequently than they do the shaft. In comparison with the neck the rest of the bladder is a mere passive receptacle, and enjoys a proportionate share of immunity.

These considerations are not merely theoretical. They are borne out by facts. Within the last few years, since the importance of the subject has been recognised and the improvement in the methods of investigation of the bladder have rendered early diagnosis possible, the proportion of cases of primary tuberculous disease of the bladder has increased considerably, and a very fair number of them has been operated upon, many of them with marked success. I have operated myself on three occasions. The first was in January, 1894. The patient had been suffering from cystitis for upwards of three years. Recently the urine had become ammoniacal. Several ulcers, coated over with a mixture of pus phosphates and caseous *débris*, were found around the neck. These were scraped and, where possible, cauterised, some iodoform being rubbed in afterwards. The bladder was drained for a few days. The wound healed in three weeks. The symptoms were relieved almost completely, and though the patient, whom I have seen quite recently, has sometimes to rise once at night, there has been no recurrence, and her general health is perfectly satisfactory. In another, operated upon two years ago, the bladder was opened a second time, a few months after the first, owing to a recurrence of the symptoms, but the patient, a boy, 12 years of age, has remained well since. A third is too recent to be of value. In addition to these I have come across two cases in which, from the *post-mortem* evidence, there can be little doubt that had the diagnosis been made sufficiently early the patients might have been spared a great amount of suffering, even if the end had been the same, at the cost of a moderately severe operation. In both at least it is certain that the disease was very much more advanced in the bladder than it was elsewhere, and appeared to be of much older date.

Several other cases of suprapubic cystotomy for tuberculous ulceration have been reported in England. Two of these were

operated upon by Battle, one, the first in England, so long ago as 1889. Five years later it is recorded that there was no recurrence, and that the patient continued in good health. The other was almost equally successful. Abroad there have been many cases. I have found the records of upwards of 30, and during the last few years the number has shown a much greater tendency to increase. The operation had already been performed on several occasions, but the credit of deliberately opening the bladder with the view of dealing with a tuberculous growth apparently belongs to Guyon. In some instances the affected portion of the mucous membrane has been excised. In most a curette has been used, and then the ulcerated surface touched either with Paquelin's cautery or with a strong solution of chloride of zinc. Hæmorrhage seldom appears to have given any trouble, but in one or two instances it has been necessary to pack the interior of the bladder with iodoform gauze. As a rule the injection of hot water is sufficient. In three instances in which the whole of the interior appeared to be covered with tuberculous granulations, Bardenheuer dissected off the mucous membrane, practically abolishing the bladder, for, of course, only a very limited reproduction is possible after such treatment, but when such an extensive proceeding is required it is questionable whether much good can result. The after condition of the patient at best must be very wretched. In most of these cases the disease was confined to the bladder, but not in all. In three the operation was performed either as part of a more extensive one or with the object of relieving the patient from a source of intense suffering even though a permanent cure may not have been possible. Reverdin's patient, for example, had suffered two years before from tuberculous epididymitis, and was well two years after the operation in spite of having had a perinephritic abscess. Greiffenhagen's had a caseous abscess pointing in the perineum, probably in connection with one of the vesiculæ seminales. And another case is reported by Bell, in which, in spite of the presence of tuberculous epididymitis, the bladder symptoms almost disappeared after the ulcers had been scraped with a Volkmann's spoon through a suprapubic opening, and cauterised. Two years later, when the testis was removed, the man was described as well, with the exception of some incontinence of urine.

I quite agree that constitutional measures should always be tried first where they are practicable, and also that it is of no use attempting a radical cure of the disease when the bladder has become so contracted and is so rigid that suprapubic cystotomy without anything further is a matter of considerable difficulty. But if the diagnosis is made at the beginning of the disease during its early stages, before the bladder has become generally affected, and the patient does not rapidly improve under such constitutional treatment as is possible, I submit that suprapubic cystotomy, followed by excision or erosion of the growth, offers a fair prospect of cure in cases in which the infection of the bladder is primary; and even in those cases in which other organs are involved as well, the operation may with very little risk provide a means by which much of the suffering which inevitably follows can be avoided, suffering which is almost intolerable in its severity, and which neither drainage nor morphia seems to have the power of controlling.

Mr. FREYER remarked that there was perhaps no subject in the surgery of the urinary organs which occupied such a debatable position at the present time as that of surgical interference in tuberculous disease of the bladder, except perhaps senile hypertrophy of the prostate. Tuberculous disease of the bladder, he observed, was an exceedingly obscure affection to diagnose without the aid of the cystoscope. There was no other disease that so closely resembled it as stone in the bladder. The symptoms of both were very much alike—increased frequency of micturition, the feeling of pain in the end of the penis, and so on. In tuberculous disease there was rarely the sudden stoppage in the flow of urine, but, on the other hand, this symptom was not altogether common in stone. He called attention to one diagnostic symptom, viz., that increased frequency of micturition in cases of tuberculous disease of the bladder was as marked at night as by day, whereas in stone this symptom was not complained of at night. He was unable to agree with the author that tuberculous disease of the bladder as a primary disease was at all common. His own experience was that it was almost invariably met with secondary to tuberculous disease elsewhere, and the order of frequency of the parts thus affected was (1) tuberculosis of the epididymus, (2) of the vesiculæ seminales, (3) of the prostate, (4) the testicle, and, lastly, of the kidney. He said he had opened the bladder in six or seven cases of tuberculous disease of that organ, and in only one or two had he had reason to regret having done so. His experience, however—and his opinion was shared by his colleagues at St. Peter's Hospital—led him to abandon almost entirely the surgical treatment in favour of constitutional medical treatment. When one opened a bladder in a case of this kind, no matter how much one might scrape the disease away, no matter how much one cauterised, the tendency was for the disease to increase, and in all probability the suprapubic wound would take months, if not years, to close, supposing that the patient did not die in the meantime of

exhaustion. He had been surprised to hear the author say that there was practically no danger attaching to the operation of opening the bladder suprapubically. Barling, of Birmingham, in a paper on the suprapubic operation for the removal of stone in children, gave the positively appalling mortality of 20 per cent. on the 40 or 50 children operated upon in 12 large hospitals in London and the provinces; yet the removal of a stone was obviously a less serious operation than curetting the bladder. His experience of cystoscopic examination of these cases had shown him that the disease was more common on the trigone than anywhere else, and this he attributed to infection or extension from the vesiculæ seminales and other organs in that neighbourhood.

Mr. BATTLE said the subject was one in which he had taken great interest. Those among them who had seen cases of tuberculous cystitis in the later stages and had witnessed the agony these patients underwent, must feel that the profession had hardly done the best possible for these miserable cases. He would divide the cases into two groups—those in which there was a chronic ulcer of the bladder, which could be easily got at and scraped, and those in which the bladder was covered all over by granulations projecting into its cavity, especially in or near the neck and about the trigone. He thought that comparatively few cases came under observation of primary tuberculosis of the mucous membrane of the bladder. In a large proportion of the cases the disease was secondary, but even these cases were, he thought, to a large extent amenable to surgical treatment if taken in time. Tuberculous disease of the bladder was so far like cancer that the longer it was left untreated the less chance there was of getting it well. He himself had operated on six cases of tuberculosis of the bladder, the first being the case, referred to by the author, of a woman with chronic ulcer who had continued well for at least five years afterwards. The other cases comprised one female and four males. The first of these was a woman, aged 30, who had been suffering for two years from bladder symptoms, and when he saw her was much exhausted by the prolonged pain and occasional hæmorrhage. There was chronic cystitis and hæmorrhage, for which, indeed, the patient had been brought to him. It was really a case of multiple tuberculous disease and not growth as was thought, and, although she pulled round for a time after the operation, she died from hemiplegia, apparently the result of thrombosis. In none of the cases had he been able to find any evidence of secondary tubercle or tubercle elsewhere in the body, excepting in this case, where the right kidney was affected. He admitted, however, that it was sometimes very difficult to say whether the disease was secondary or primary. One of the male cases, a young constable, got well and had continued in good health. The second patient was another policeman, but he refused altogether to submit to continuation of the treatment at the end of a month, and left. That was three years ago, yet the patient had not since developed any tuberculous disease of the lungs, and on the whole was much relieved. His original symptoms were very severe. The third male case was not a success, that is to say, he did not think the patient was at all improved, and they had experienced great difficulty in getting the suprapubic wound to close. The fourth case was sent in as one of papillomatous disease of the bladder. When he operated the symptoms had been present for four months, with much hæmorrhage. He found a condition of scattered tubercle over the mucous membrane of the bladder. He

considered that the best way was to scrape the deposits away with the finger-nail, afterwards rubbing them over with a small sponge, as recommended by Bryant in some cases of papilloma of the bladder. That patient did not improve. He had kept the wound open for some time in order to see whether it was true, as alleged, that the result depended largely upon the length of time one kept it open. On examining it at the end of some weeks he found that much growth had recurred, and this was again removed. The patient still had this opening, and really if he were not a very patient man he would not have gone on with it so long. He had not seen any grave results following ordinary opening of the bladder suprapubically, except when an attempt had been made to close the wound and secure primary union; when that was done he had witnessed some very unfortunate results.

Dr. CLIFFORD BEALE commented upon the extreme rarity with which tuberculous disease of the bladder coincided with tuberculosis of the lung. On looking through a large number of records of *post-mortem* examinations he had not come across a single instance in which they existed together. He recalled one case in which the patient presented a peculiar symptom, in that the pain would be very severe for a short time, but the patient passed perfectly normal urine. At indefinite periods a considerable quantity of pus would come away in the urine and the pain would be relieved. For a short time this patient would again be passing perfectly normal urine and would be free from pain. He had been found to be suffering from tuberculosis of the seminal vesicles, with suppuration, and as at that time no operation was recognised the patient died from tubercular peritonitis. In that case the patient might have been saved if the local disease had been removed by operation.

Mr. MANSELL MOULLIN, in reply, said he had not expected that everybody would agree with him, nor did he pretend to cure every case of tuberculous cystitis. When one thought of the painful death which this disease entailed and the sufferings which even morphia could not relieve, if they could only save a few of these lives the result was worth striving for. He did not think that tuberculous disease of the bladder was often secondary to tuberculous disease of the vesiculæ seminales; in fact, he had come to the opposite conclusion. He pointed out that it occurred in women, in whom the genital organs in most intimate anatomical relationship with the bladder seemed to be peculiarly immune against tuberculous disease, as well as in men. If tuberculous pyelitis occupied the fifth and last place in the list of affections to which tuberculosis of the bladder was secondary, it seemed as if these cases must almost all be primary. Given a case of tuberculosis of the bladder secondary to disease of the vesiculæ seminales, he would not hesitate, if the conditions were otherwise favourable, to clear away the lot. The vesiculæ seminales could be easily reached by what is known as Luekerkandl's operation, separating the bladder from the rectum and dissecting through the various tissues intervening.

RECURRENT HÆMATEMESIS DUE TO COMPLETE HEPATOPTOSIS DISCOVERED BY LAPAROTOMY.

By H. MACNAUGHTON-JONES, M.D., M.Ch., M.A.O., F.R.C.S.I.
and Ed.

THE patient, an intelligent married woman, aged 38, the mother of seven children, gave the following facts relating to her previous history:—She had been a delicate child, and had suffered in early childhood from glandular enlargements of the neck and behind the ears. These disappeared, and at the age of 15 menstruation commenced. At 16 she had an acute attack of pleurisy; at 18 she was treated for severe gastrodynia, with vomiting, which was followed by amenorrhœa and general anæmia. In her 19th year, for the first time, there was hæmatemesis, and she was treated for acute gastritis, gastric ulcer, and “vicarious menstruation.” She recovered, and had comparatively good health until she was married, at the age of 23. Five months after her first labour she again vomited blood, having for some time previously suffered in her general health. She again recovered. Her seven pregnancies occurred between the years 1884 and 1893, and there was nothing abnormal in any of her labours. In 1895 she had a miscarriage, followed by metrorrhagia, which lasted for some time, and in December of the same year there was again hæmatemesis. In the following June she had an attack of typhlitis, followed by severe metrorrhagia, which lasted for some months. In April, 1897, having gone to the seaside for change, she eat some shell-fish (clams), after which she vomited, the vomiting continuing on and off with severe gastrodynic attacks. Early in July hæmatemesis again recurred, and continued up to the time that I saw her with Dr. William Barter, of West Hampstead, in July, 1897.

She had been under his care periodically during the years 1895, 1896, and 1897, suffering occasionally, as I have said, from menorrhagia and attacks of dyspepsia. In June, 1897, she again consulted him for gastrodynia, and radiating abdominal pain, apparently recurrences of her old attacks of gastritis. She improved under treatment, until July 7th, when she lost a quantity of blood from the stomach. I saw her on the 14th, and

there was another alarming attack on the 16th, and again on the 19th. When I saw her on July 14th, she was blanched, extremely weak, and had a very rapid pulse, her strength being maintained by nutrient enemata, as no food could be retained by the stomach. There was very little pain. Vomiting was with difficulty restrained. On examination of the abdomen, I found the abdominal percussion note was resonant in every direction save in the right hypochondriac, lumbar, and inguinal regions, and within the dull area there could be defined a fairly large movable mass, the edge of which was felt extending from the lower ribs to the inguinal region. This edge appeared to be somewhat thin, giving the tactile impression usually experienced on feeling an enlarged spleen. There was neither a renal nor hepatic line of demarcation. The question of diagnosis resolved itself into the determination of a hepatic or renal enlargement, and after careful examination and discussion we inclined rather to the view of an enlarged and movable renal tumour. The condition of the patient was then so alarming that subcutaneous injections of artificial serum were decided upon if there were any return of the hæmorrhage, but fortunately this did not occur. In her state abdominal section was out of the question. I did not see her again until the following September. She was still confined to bed, and had not recovered from the severe hæmorrhages of July. I then advised abdominal exploration, with a view to determining the exact nature of the tumour, and, if possible, its removal.

On September 17th I performed abdominal section in a medical home in the presence of Dr. Barter and Mr. Bland Sutton, the latter of whom kindly gave me his assistance. The tumour, occupying the same position and regions as previously mentioned, was reached by the ordinary Langenbuch's incision for nephrectomy, but when the abdominal cavity was opened it was found that it was the edge of the liver which extended from the costal cartilages to the iliac fossa, the right lobe being in the latter position. The gall-bladder was exposed, and was found some 3 inches below and to the right of its natural position. I passed my hand under the diaphragm, and found the vault empty. The liver was raised out of its place and examined. In appearance it was darker than usual, and the surface somewhat deeply injected. Both kidneys were examined, and found to be normal in size. So was the spleen. The liver was resting directly on the right

kidney. It was replaced in the same position, and the stomach was taken out, laid on the abdominal wall, and in its turn closely examined. It was somewhat enlarged and its vessels rather distended, but nothing abnormal to touch was found. After careful readjustment of the parts, the abdominal wound was closed in the usual manner. The patient made an uninterrupted recovery without any complication. There was no sickness after the operation, nor has there been any since. She gradually returned to ordinary diet, and left on October 10th for the seaside. "Since that date," Dr. Barter writes, "the patient has gone on improving, and now, with the help of her abdominal support, and with due regard to careful dieting and exercise, is better than she has been for years."

A few remarks on the literature of hepatoptosis may be of interest. Mariano Semmola and Carlo Gioffredi* credit Glenard with the application of the term *hepatoptosis* to migratory or movable liver, pointing out the distinction between acquired conditions and those congenital instances of transposition, one case of which, associated with similar transpositions of the spleen, they had seen. Such complete transposition of the liver was recorded by Coltmann (Satellite), in the case of a Chinese boy, aged 19, who had spinal curvature, with an enlarged spleen. The heart was transposed, and the liver was on the left side.

Laurent Hiester first, in 1754, demonstrated hepatoptosis on the cadaver; in this case the stomach was small and partly hidden by the distended colon and the liver, and Catani, in 1866, upon the living subject. The liver in varying degrees of displacement has been generally found lying in the position described in the case just quoted. Such complete displacement as I have described has not been, that I am aware of, recorded. In reference to the asserted causes of this condition, the authors referred to note that it has been found in virgins and in women who have never laced or been pregnant. In my case, from the early history of the patient, her character, and the most careful questioning, I arrived at the conclusion that there was no ground whatever for suspecting that she tight-laced. The kidneys have been found to be movable in a few cases, and it has been thought that congenitally lengthy ligaments, with relaxed abdominal walls, might account

* 'Twentieth Century of Medicine,' January 30th, 1895. An interesting article appears, to which I am indebted for much information on the subject.

for the displacement. I cannot see how either movable kidney or inflammation of the ligaments, as has been suggested, can have any bearing upon it. In the paper referred to, the symptoms of pain, radiating to the shoulder, with a sense of weight, and possibly jaundice or ascites, are recorded; but I have found no mention of hæmatemesis. The diagnostic signs I have sufficiently indicated in my typical case, and the error into which I fell of balancing in favour of an enlarged kidney is easily explainable. The association, already alluded to, of displaced kidney with hepatoptosis must make the diagnosis in some instances still more difficult, inasmuch as the symptoms arising from a mobile or migrating kidney may closely resemble those produced by the mobile liver. In such a case, operated upon by Richelot, hepatopexy was performed.

Billroth was the first who sutured a lobe of the liver to the abdominal wall, thus performing hepatopexy. The detached lobe of the liver was discovered accidentally, having been mistaken for an abdominal tumour. Marchand, again, in 1891, operated deliberately for a displacement of a lobe and movable kidney. Ischering also operated successfully on a displaced lobe.

Out of 70 cases collected by Dr. Graham, and brought before the American Association of Physicians at Washington in May, 1895, and subsequently tabulated in the 'Canadian Practitioner' of June, 1895, there were but eight cases in which fairly presumptive or absolute evidence of such displacement had been produced. In many of the cases reported only a lobe of the liver was found mobile, or an accessory lobe discovered. The organ has been found in a large umbilical hernia in a child, by Scudder, who operated and replaced it (reported by Peters)*; and Kusmin found part of the right lobe of the liver in an abdominal hernia, which he also replaced.†

In four cases only of the 70 collected by Dr. Graham was the condition established by operation. One resembled in many particulars that which I have recorded. Here an operation was undertaken for supposed hydronephrosis. The liver was in the same position, and the objective signs before operation were somewhat similar. A fall against a prominent object during

* Boston, 'Medical and Surgical Reporter,' January 4th, 1894.

† 'Revue de Science Médicale en France et à l'étranger,' Paris, July 15th, 1894.

pregnancy was the assigned cause.* In Richelot's case, already referred to, the abdomen was opened for supposed tubercular typhlitis. In Terrier's and Baudin's case† the diagnosis was floating kidney. An enlarged sclerosed liver-lobe descending to the umbilicus and right iliac fossa was discovered, and the gall-bladder, being distended with calculi, was stitched to the abdominal wall.

In Binnie's case‡ there was dyspepsia and jaundice. The tumour had been observed for three years. The right lobe was dislocated downwards, the tumour being at the level of the umbilicus. The suspensory ligament was elongated. Carcinomatous nodules were found. The patient had had a fall on the right side, but had never tight-laced.

Of the four cases not operated upon, § in one the liver was found to be partly displaced by a fall which had occurred 16 months before; in the second, there was a tumour resembling the liver in a dilated abdomen, stretching from one hypochondriac region to the other; in the third, the liver appeared to have been displaced upwards beneath the ribs; the spleen also was displaced; there had been symptoms of jaundice, and distended abdomen. In the fourth case the displacement of the left lobe was downwards and to the right, and could be replaced in the horizontal position.

Other cases have been published, as one by Symanousky, in which a small liver was displaced downwards, the inferior border reaching to the umbilicus. The ligaments were long, the gall-bladder enlarged, with a large calculus near the cystic duct, which was obliterated. There have been instances of floating liver lobes which have concealed movable kidneys. In Teube's case (January 23rd, 1894) a *post mortem* revealed a long suspensory ligament $7\frac{1}{2}$ centimetres long, the left lateral ligament being 4 centimetres long.

It appears, from a perusal of the various cases recorded, that the symptoms depend upon the hepatic complications of the displacement, the association of a displaced or mobile and enlarged

* 'Medical Times and Gazette,' 1882, p. 142.

† 'Progrès Médical,' 1888, pp. 121-3.

‡ 'Medical Press and Circular,' July 26th, 1893; and 'l'Union Médicale,' 1893.

§ 'Canadian Practitioner,' June, 1895.

kidney, and upon the degree and position of the displacement. It would seem that both jaundice and ascites are rarely present, that gastric disturbances with epigastric and hypochondriac pain are the most frequent consequences, and that when we find these symptoms combined with the presence of a tumour simulating that found as the result of an enlarged and mobile kidney, we may suspect that hepatoptosis is present, and be on our guard—a suspicion which may be strengthened if we find undue resonance in the hepatic region. I cannot help thinking that congenital causes are more frequently the source of the displacement than accidental or acquired ones. In the case whose history I have narrated it was evident that not without serious risks to the organ could any attempt at placing the liver in its natural position be made. The patient now wears a belt furnished with an air-pad, which covers the more prominent part of the liver and gives it support. It will be noticed that this is the first case in which such complete lateral displacement has been (so far as I know) discovered during life by operation.

Mr. BATTLE related a case at present under his observation in the out-patient department, that of a woman, age 45, who came complaining of severe abdominal pain on the right side. She had a pendulous abdomen, with very lax abdominal walls. On close inspection with the patient lying on her back, there was to be felt a large tumour which ran transversely from the umbilicus extending into the right kidney region, and this was where she felt the pain. He could pass his hand above this large swelling and under the ribs apparently over the convex surface of the liver. When she stood up the mass slipped down and came to rest on Poupart's ligament; in fact the right lobe of the liver was in contact with the ligament. Besides the pain there was a certain amount of gastric disturbance, and she looked very haggard and worn in consequence. He had applied an ordinary flannel bandage, and since then her appearance had much improved. He hoped to be able to show this case at a future meeting of the Society.

The PRESIDENT observed that the author had made it clear in his paper that these cases were not often associated with hæmatemesis, and he asked whether there was any recorded case in which ascites was present. It was interesting that in this case there was a very profound dislocation productive of hæmatemesis, but not of ascites. He added that the case was deserving of being placed on record; it was in fact almost unique.

Dr. MACNAUGHTON-JONES, in reply, said that there had been jaundice and ascites in some of the cases recorded, but not in his. The interesting point to him was that this case so closely resembled a previous one under his care, in which the tumour he had removed proved to be an enlarged and cancerous kidney. It had been pointed out that in hepatoptosis careful percussion showed the absence of the liver in the hepatic area. Therefore, if a patient came with what appeared to be a large and mobile kidney, it would be important to define carefully the resonant line of

percussion. This was the more necessary as so many of these cases had been shown to be only lobular displacement, and had been mistaken for hydronephrosis. He supposed that the hæmatemesis was due to congestion of the gastric vessels resulting from some twisting of the ligament and obstruction of the hepatic vessels, though he admitted that the liver appeared to him to have lain in that position always. The liver was about the usual size, the only abnormality being its congested nutmeg appearance. The sharp edge of the liver as felt during life exactly corresponded to the feeling given by the edge of an enlarged spleen.

May 16th, 1898.

THE ANNUAL ORATION—"THE MOSCOW CONGRESS :
A HOLIDAY ; WITH COMMENTS ON SUGGESTED
TOPICS."

By FREDERICK T. ROBERTS, M.D., F.R.C.P. Lond.

MR. PRESIDENT AND GENTLEMEN,—You, Sir, with the other members of the Council of the Medical Society of London, have again, from purely friendly motives, lured me from the obscurity and retirement for which I instinctively crave and for which nature intended me, and have thrust me into a conspicuous and much-coveted position. I should indeed be wanting in appreciation of such kindness, and even in mere courtesy, if I did not express at the outset my feeling of deep gratitude for the honour thus conferred upon me, especially as it is wholly undeserved. I am, however, none the less conscious of my unfitness for the task and of my deficiency in the qualifications necessary to command the attention and interest of such an audience as is gathered together on an occasion like this, most of whom are, I have no doubt, impatient and eager to take part in the more attractive social functions of a conversazione, to enjoy a chat with friends whom probably they seldom meet except at these times, and to indulge in the delights of the "fragrant weed." And yet, Sir, you have now actually designated me an "Orator"! Fortunately for my peace of mind, this word has nowadays a very wide and indefinite signification, and by no means implies the possession of the faculties or powers which were originally associated with

the expression, and which in ordinary language it is supposed to suggest.

With the view of getting a hint as to a suitable topic for this address, I asked our always obliging and courteous registrar—Mr. Hall—whether he could furnish me with a list of the subjects dealt with in previous orations. There was no such record, but he at once took the trouble to prepare one, and as the result I have here a list of the orators since 1774 and of the topics on which they discoursed, so far as they are known at present. I have thus at least the satisfaction of being responsible indirectly for calling into existence a record which, while of great interest in itself, will be of much value for future reference. I found, however, that it did not help me materially, except by showing that the subjects presented great variety, and that I was at liberty to be guided entirely by my own inclination in selecting one. Of course, favourite themes were, in addition to matters relating to the Society itself, the grandeur of our profession as well as its defects, its internal and external relations, how to promote its progress, and the remarkable advances, real or supposed, made from time to time in the various branches of medicine and surgery. These are always tempting and attractive topics, which open up channels for any amount of talk, but for various reasons I personally rather shrink from them, and, at any rate, they are sufficiently discussed at the present day not to call for any special reference to either of them on this occasion.

I need scarcely remind you that the year 1897 was a memorable one in several respects, and some of its events have had important relations to the medical profession. Amongst those of special interest to us were the annual meeting of the British Medical Association, held for the first time in one of our great colonies, and the Twelfth International Medical Congress at Moscow. For reasons which I need not enter upon I chose to attend the latter; and “The Moscow Congress” seemed such an easy way of getting out of any difficulty in deciding upon a subject, that I determined to inflict it upon you, though I have no doubt most of you, either from personal experience or from reading the accounts in the medical and lay press, know as much about it as you desire. I must, therefore, appeal to your kind indulgence on this ground amongst others, that in days to come the mere record in the ‘Transactions of the Medical Society of London’ of the fact that

the International Medical Congress was held in Moscow in 1897 may prove interesting to future generations, and especially that this Society was represented as a delegate by its esteemed and distinguished president, Dr. Sansom. I regret to say that I am not the first in the field, for others in this and other countries have given addresses on their Russian experiences and impressions in connection with the Congress, which does not make my task any the easier or lighter. I hope, however, that there is still something left for me to speak about, and there are aspects of the subject which, so far as I am aware, have not yet been dealt with.

It must seem at first sight highly incongruous and absurd to associate, as I have done, the idea of "a holiday" with the Moscow Congress. To think of going from one large city to another in the height of the hot season, attending crowded meetings as well as fatiguing evening social gatherings and entertainments, most of them continued into the "early hours," and calling such an experience a holiday! Moreover, judging from remarks I have heard, it seems to be a deep-rooted notion amongst the laity, as well as amongst many medical men who do not honour congresses with their presence, that those who do attend such gatherings are consumed with an ardent desire for scientific and professional progress, and consequently devote themselves heart and soul to the active work connected therewith, taking part in various discussions, reading and listening to elaborate papers, absorbing and imparting fresh knowledge, and helping to bring into practical utility the results of all sorts of novel and marvellous discoveries. I think, Mr. President, you will agree with me that on the whole this is a delusion, though there are no doubt a few who take things very seriously on these occasions. I may remark, in passing, that individual notions as to what constitutes a "holiday," and how it may be best spent, are very different. A few years ago a very interesting and delightful account of a "Doctor's Holiday" formed the topic of one of these orations by Dr. Ord. There was an air of calm and restfulness about his experiences that made them highly attractive. Others must be always killing something, but in saying this I do not mean to cast any reflection upon members of our profession. Others, again, make a very toilsome business of a holiday, being incessantly "on the move," taking "record" walks or bicycle rides, or climbing some

mountain peak, and the more dangerous their exploits the keener the pleasure they derive therefrom. Some stay at home perpetually, being so devoted to the practice of their profession that this is to them a constant holiday, and they are miserable when away from their work.

Speaking personally, I am glad to say that I can thoroughly enjoy different kinds of holidays, provided I am not expected to put forth too much energy and needlessly risk my life and limbs. From more than one point of view the visit to Moscow might fairly come under the category, for at any rate it afforded a rest and change from the ordinary routine of London life, professional and social; while, altogether apart from the Congress itself, one could not but feel deeply interested in the novel sights and experiences associated with a most remarkable country and city not previously visited, and in observing and gaining some acquaintance with the Russian people, their conditions, habits, and mode of life. But in the title of my address I have coupled the idea of a holiday with the Moscow Congress for a special reason. I wish it to be clearly understood that in relation to this event I held an entirely unofficial, independent, and individual position. I was not even a "delegate" from any society, association, corporate body, or university, but a mere "outsider," an "item," an "unit" in that vast gathering, occupying a very "back seat," and decorated with the simplest badge which the Congress could furnish. Do not imagine for a moment that I am complaining of this. I rejoiced in my liberty and took full advantage of it. I felt that I could spend my time exactly as I liked, so long as I conducted myself in accordance with Russian regulations and ideas, disregard of which might lead to unpleasant consequences. Further, I was calm in the happy consciousness that unless I chose to do so I was not called upon to take any active part in the work of the Congress, nor had I looming before me the prospect of having to give an account of my doings or to prepare any official report. And now, Mr. President and Gentlemen, I am ashamed to confess that I did nothing of which there will be any record in the proceedings of the Moscow Congress. The 'Transactions' of this Society will bear testimony to the general fact that I never read papers anywhere if I can possibly avoid doing so, and I must say that I do not regard it as the height of bliss to be obliged to listen to them, especially when they are practically

inaudible and delivered in, to me, an unintelligible language. As to taking part in a discussion, I shudder at the mere thought. I am fully aware that in these days such conduct is very foolish from several important points of view, and I by no means commend it for imitation. On the contrary, I take this opportunity of strongly advising the "rising generations" of the medical profession to bring themselves to the front as much as possible if they wish to succeed, and to assert themselves, not only at home but abroad, and especially when they attend foreign congresses. I cannot answer for members of other professions, for men engaged in commerce, for explorers of new countries and so-called "pioneers of civilisation," for politicians or statesmen; but as regards the members of the medical faculty in this country I have a strong impression that, as a class, we are not so forward or "pushful" as we might be, and in this respect are far behind certain other nations. Consequently their representatives are always to the fore at these gatherings, and only too ready and eager to assume prominent positions. At the Moscow Congress a few of our representatives were invited to occupy more or less conspicuous positions, or to read communications on special subjects. We were all particularly pleased to see Sir William MacCormac presiding at the last of the general meetings, and he conducted the proceedings in his customary dignified and genial manner. Dr. Lauder Brunton upheld the honour and prestige of his country by delivering one of the addresses at the first great meeting. Our distinguished Fellow, Dr. Pavy, read a communication on Diabetes by special invitation. Others were elected vice-presidents or presidents of sections, and occupied the chair at some of these gatherings, amongst them the President of this Society. A few of their own free will sacrificed their comfort to their sense of duty by reading papers or joining in discussions. On the whole, however, our countrymen kept very much in the back-ground, and the record of actual work done at the Moscow Congress will not contain so many names of our well-known leading men as might be wished. And now, Mr. President and Gentlemen, I have further to confess, as bearing out my idea of a holiday, that I did not even attend the meetings of the sections as diligently or regularly as I might or ought to have done. In duty bound I entered my name for one of them—namely, that of the "Malades Internes"—and did spend a little time there at intervals.

Moreover, I looked in at other sections in a casual way, more from curiosity than anything else, and was sometimes much entertained, if not edified or instructed.

My remarks up to this point will have prepared you for the announcement that I am not in a position to give such an account of the scientific and practical outcome of the proceedings of the Moscow Congress as you might reasonably expect. For this perhaps you will be grateful, for a disquisition on this line is apt to be very tedious and trying for an audience. But while I did not actively engage in the work of the Congress, I desire at once to remove any impression that I looked upon the occasion as a mere pastime, or that I intend to deal with my subject in a wholly frivolous and irresponsible fashion. In relation to the gathering itself one could not help feeling a real interest in the proceedings, observing and taking note of events and circumstances connected therewith, reflecting upon the work done and the subjects dealt with, and endeavouring to realise and estimate the present position of our profession, as well as the comprehensive or cosmopolitan tendencies of modern thought and practice in relation to the "science and art of medicine," using the expression in its widest sense. Moreover, a medical congress suggests, either directly or indirectly, many questions of the deepest interest and importance to us as a profession, and I regard my independent and unofficial position at Moscow as affording me full liberty to refer to any matters of current interest which fairly come within the range of my theme, and to express my personal opinions and feelings in relation thereto.

Before dealing briefly with some of the more prominent events immediately relating to the Moscow Congress, I must just allude to a difficulty which pertains more or less to all international congresses, but which in this case assumed unusual proportions, and that is as regards the matter of languages. Personally, I must regretfully admit that I am very deficient in knowledge of foreign tongues, and much of my remissness in listening to papers and discussions was, as I have already hinted, due to this cause. I have an impression that not a few of my fellow countrymen were not much better off than myself, though some, on the other hand, excited our envy by being able to discourse fluently in public in French or German. But I was particularly struck not only with the advantage of a thorough knowledge of these and

other of the more familiar modern languages, but also with the importance of cultivating the faculty of acquiring languages. I desire to enforce this point emphatically upon my younger hearers. At the present day you have very great advantages over your predecessors, and are expected to have a tolerable acquaintance, at any rate, with French and German, especially if you aim at taking a high position in your profession. This is necessary even for literary purposes, but I would remind you that to carry on a conversation in these languages, and to follow with comfort the business of a foreign congress, are very different matters from merely knowing just enough to enable you to read books and articles on professional subjects. I met some American friends at Moscow, who, being adepts at learning languages from prolonged training, and possessing much determination, arrived there with a very fair knowledge of Russian, which served them, and their companions sometimes, myself amongst the number, in excellent stead. One gentleman from the United States actually responded in Russian to a "toast" at the dinner of one of the Sections, and you may imagine with what enthusiasm his speech was received.

It is a common impression, and probably a true one, that foreigners learn English much more frequently and thoroughly than we do their languages, and we are often given to understand that Russians are especially proficient in our tongue. So far as my experience went this is certainly a delusion, for I met with very few Russians who knew anything about English, though a comparatively small number had a smattering which enabled them to be of decided help, for which one felt very grateful. In this connection I may mention that I have seen it stated in print, though I cannot personally vouch for the fact, that in the sections "an English paper usually cleared the room, or nearly so, of all but English and Americans." Although it has been affirmed that we as a nation were not in particularly high favour at the Moscow Congress, I cannot suppose that such conduct was intentional, but would rather take the more friendly view that it was the natural outcome of linguistic difficulties.

It was a very gracious act on the part of the Government to give members of the Congress "free passes" over their railways, nor would it be right to omit acknowledging the efforts which they made to guide and help benighted travellers on their arrival at the Russian frontier and at the railway stations of the great

cities, as well as in their travels from place to place. That they were not always successful was due to circumstances over which they had no control. Russians of all classes are undoubtedly most civil, courteous, and obliging, and personally I was treated with the greatest civility and consideration at the frontier. With a good deal of lifting of hats and bowing, the officials declined to examine any of my luggage. Unfortunately, however, this experience taught me rather an unpleasant lesson, of which I give you the benefit, and that is not to trust too much in people who treat you with excessive politeness and suavity. As a matter of fact, my luggage was not sent on at all, but retained at the frontier, owing to some little hitch in the matter of stamping, and I spent the greater part of my time at St. Petersburg, which I first visited on my way to Moscow, in endeavouring to gain possession of it—a feat which I believe I never should have accomplished had it not been for the help of some most kind English friends. And here let me express my personal obligations, shared, I am sure, by many of my fellow-countrymen, for the kindness and courtesy shown us by British subjects resident in Russia, both in St. Petersburg and Moscow, including His Excellency the British Ambassador, the Consuls and Vice-Consuls, representatives of the Press, and private individuals.

On arriving at Moscow it was an immense relief, in the midst of the din and confusion, to be addressed in broken English, but sufficient for the purpose, by a most active, intelligent, and agreeable medical student, in neat uniform, who took charge of our party, speedily relieved us of all trouble and anxiety, and conducted us most comfortably to our destination. Indeed, throughout the Congress we found the students, ladies amongst them, most kind, attentive, and helpful, and I shall ever remember them with pleasure and gratitude.

I think that those who were present at the Moscow Congress are not likely to forget the “*Manège*” or “*Palais d’Exercice*,” a huge building in which the “central bureau,” with its various departments, was located. For those who had arrived fairly early and had got over their troubles without any great difficulty, it was decidedly amusing to watch the frantic struggles of the seething crowd of applicants for tickets, badges, programmes, and general information. It so happened that at the time of the Congress a correspondence was going on in one of the London

daily papers with regard to "overcrowding in the medical profession," and while there I came across some of the letters on the subject. It struck me, here was an object-lesson of the fact with a vengeance! Between 7,000 and 8,000 members of the craft were gathered together, and we were a motley crowd! There appeared to be representatives of almost every known more or less civilised nation or country, and of every type of humanity. Need I say that we were also honoured by the presence of a considerable proportion of "lady doctors," who are quite an institution in Russia! If one ever felt dull or tired a visit to the "Manège" was always entertaining and interesting, but the time to see it at its best was during the period of the day allotted to "free lunch and drinks," with which we were most generously regaled for several days.

A striking contrast to the "Manège" was the "Assemblée des Médecins," where the "Comité des Dames" had a special bureau and a most delightful salon. Here everything was refined and restful. The ladies who formed the committee, some of them of the highest rank, were most attentive and hospitable, both collectively and individually, and exerted themselves to the utmost to contribute to the enjoyment of the lady visitors, for whose benefit their efforts were primarily intended, and to enable them to visit comfortably the various places of interest in Moscow and its neighbourhood. But their kindness did not stop here, for they never refused a helping hand to the gentlemen. In addition to a magnificent *soirée*, the ladies had a most delightful introductory *réunion* on the evening before the Congress was actually inaugurated. Here might be seen Virchow, under the immediate protection of the Lady President, surrounded by successive relays of ladies, all eager to pet and do homage to the venerable pathologist. He appeared to be thoroughly pleased with himself and to enjoy fully his experiences, as well he might. Altogether, the ladies at Moscow raised a very high standard, which it will be difficult to reach at future congresses.

Another scene which will live long in the memory of those who were privileged to witness it is that which was presented at the magnificent Grand Theatre Imperial of Moscow on the occasion of the first general assembly of the Congress, and the inaugural ceremony which then took place. It must stand out as the most brilliant and imposing sight which has ever occurred

in relation to the medical profession, or is likely to occur in the future. I call to mind the opening meeting of the International Medical Congress in London, and it was a very poor show in comparison. I have not the descriptive faculty required to present anything like an adequate picture of the scene, even if time permitted me to launch out in this direction, and it must suffice if I mention some of its more prominent features. The Grand Duke Sergius presided on the occasion, and the Grand Duchess with her suite occupied the Royal box. The stage or platform was thronged with the officers of the Congress, State officials, civil authorities, and leading Russian doctors, as well as with representatives of almost every nation. Many were of splendid physique and handsome presence. Magnificent and gorgeous uniforms of various kinds, civil and military, constituted a prominent feature of the scene, which was rendered still more brilliant by the display of medals and decorations on expansive breasts. The whole theatre was crowded with ladies and gentlemen, the former vying with each other in the splendour of their attire and jewels, and many of the latter being also clad in military or court dress. The large majority of us, of course, were not in uniform, but we were all dressed *de rigueur*, and here and there one saw the academic garb indicating a graduate of one of the Universities of Great Britain. It was extremely interesting to see in the flesh men whose names are to us household words, and who deservedly hold high positions in our profession in various countries and cities. I will not weary you with any account of the proceedings, and will only say that so far as the Grand Duke and the Congress authorities were concerned the speeches were commendably brief. I did, however, particularly note and take an interest in the general behaviour of the audience and their attitude towards the various speakers, to which I must just refer. In the first place I realised what is contrary, I think, to the general impression, that the Russians can applaud in the most vociferous and enthusiastic manner. The nationality of the speakers undoubtedly influenced the fervency of the cheering; and as regards the speeches themselves, the points which elicited most vigorous applause were brevity, audibility, real oratory, which was exceptional, and the bringing to a close of a prolonged and tedious harangue. But what roused the audience to the highest pitch of enthusiasm was undoubtedly the personality of

the speaker. Our old friend Virchow was greeted with a warmth which was both touching and catching. And here I hope it will not be considered out of place, or in the least disparaging to our distinguished representatives, if I give expression to certain feelings that took possession of me on this memorable and exciting occasion. I confess that I felt somewhat envious and jealous for my country, and could not help being conscious of a keen sense of regret at the absence of one personality, who, I venture to affirm, had he presented himself on that platform, would have roused the audience to a pitch of enthusiasm which no words could describe or imagination picture. Need I say that I refer to Lord Lister? Among the great events of 1897 which had a special interest for the medical profession in this country will stand out conspicuously the elevation to the peerage of this most distinguished surgeon and teacher, in the truest sense of the word. Not only was it the first honour of this kind conferred upon any member of our faculty, but it may be affirmed without fear of contradiction that the choice fell upon one who would have been universally acclaimed as pre-eminently worthy of the position. His brilliant intellect, his true genius, his devoted and untiring scientific and practical work, have achieved such vast and far-reaching results, not only in relation to the medical profession, but for the benefit of humanity at large, that the name of Lister is honoured throughout the length and breadth of this land; while he is revered and beloved for his single-mindedness, his straightforwardness, and his almost too modest demeanour. Not only so, but it is difficult to realise, except by actual observation, how he is positively worshipped by the medical profession in every civilised part of the world, and to what extent his teaching and work have influenced and moulded the construction and practice of the modern great hospitals. Am I wrong in affirming that all of us who went to Moscow felt some degree of resentment at our Canadian friends who had enticed Lord Lister across the Atlantic, and that we should have experienced a deep and just pride had he been present to receive the ovation which would have undoubtedly been accorded to him by the united heart and voice of our Continental brethren?

The excitement associated with the inaugural ceremony was too much for most of us to enable us to return after the interval to listen to the more formal addresses relating to professional

subjects. So I cannot personally tell you anything about them. Nor need I refer to the second and third general meetings, except to say that they presented a marked contrast to the first, although well attended, and that the proceedings were on the whole somewhat dull and tedious. The final winding up of the business, with its complimentary and farewell speeches and greetings, was decidedly trying to the feelings, especially when the President nearly broke down with emotion, and I have an impression that Sir William MacCormac, who, as I have already mentioned, occupied the chair, realised this very keenly.

It is not my intention to inflict upon you more than a brief reference to the sectional meetings and the work for which they were responsible. It must be acknowledged that the accommodation for these meetings was most excellent as regards the rooms in which they were held, these being in some instances quite magnificent, though their acoustic properties were not always everything that could be desired. The section to which I belonged met in the splendid ball-room of the "Assemblée de Noblesses," where in the evening social functions on a grand scale took place. The subjects dealt with in the various sections appear to have been very much on the old familiar lines and on well-worn themes, and although no doubt the discussions were most interesting and instructive if one could have understood them, I do not suppose that they have brought us any nearer to a final settlement or agreement on any one disputed point. The audiences were as a rule remarkably good, and a large number seemed to take a profound interest in the proceedings. On more than one occasion I was attracted by a crowd of eager listeners gathered round a speaker, evidently trying to drink in his every word, and applauding vociferously at the close of his remarks. I naturally concluded that he was imparting some extremely important and original information, but I always found that it was only some old subject that was being dished up, perhaps in a new way. I have no doubt the same venerable themes will be trotted out on similar occasions for many a day to come. Of course, different questions which have been attracting special attention within a recent period were brought into prominence and adequately dealt with, and for the discussion of certain special subjects two or more sections met, so that they might have the benefit of their united wisdom and experience.

It would be a great satisfaction and pleasure to me, if time permitted, to enlarge upon the kindness and hospitality lavished upon the visitors to the Russian Congress, not only by our medical brethren, but by the Czar and Czarina, the Grand Duke and Duchess Sergius, the municipal corporations, the committee of ladies, and others, in the way of banquets, fêtes, and entertainments provided for their delectation and amusement. To these, again, however, I can only make a passing reference, and will say nothing as to private receptions or hospitalities. The public gatherings at Moscow were generally on a vast scale, and some were truly magnificent, while the kinds of amusements provided were of a promiscuous character, to suit different tastes and inclinations, including amongst others various descriptions of music, not always particularly agreeable to the ear, though interesting as illustrating Russian styles, and of course dancing. One of the most striking features of some of the entertainments was the enormous quantity and variety of foods and drinks provided in the way of refreshments. And a still more wonderful sight was the rapidity with which the tables were cleared of their good things, and the extraordinary capacity which many individuals exhibited for accommodating any quantity of eatables and drinkables in every conceivable combination. Truly an instructive lesson in "dietetics" from a "medical congress," and by no means the first of a similar kind! I understand that those who went to St. Petersburg from Moscow were there regaled on the same magnificent and lavish scale, but as I was not one of the number, I cannot speak from personal experience or observation.

Amongst the entertainments provided for us at Moscow there were two to which I feel bound to particularly refer for a moment. The first was a "religious concert" given by singers of "L'Ecole du Synode." Such a combination of male voices, especially basses, and such superb singing it would be almost impossible to equal, and I think I may say, for those who were present, that this concert was an immense treat, and gave us a very exalted idea as to what Russian music is capable of. The other was the delightful garden party given by the Grand Duke and Duchess Sergius at the Alexandrina Palace, on the Friday after the Congress was really over, to console those who could not get away owing to a failure of train accommodation, and to try to make their enforced stay pleasant and agreeable. Those who

were thus circumstanced had no reason to regret it, for a more enjoyable as well as refined function of the kind I never remember. Several bands discoursed splendid music, the refreshments were really beyond description, and the cordial personal welcome with which their Imperial Highnesses received their guests, chatting with them affably and without any restraint or reserve, produced a pleasing and grateful impression which, whatever happens, can never be effaced. This gracious act of hospitality on their part formed a delightful and most soothing conclusion to the Moscow Congress.

In an earlier part of this address I intimated that I might feel myself at liberty to refer to matters not immediately connected with the Congress itself, and now, Mr. President and Gentlemen, I do not offer any apology for troubling you with some remarks about Moscow, and may drag in incidentally certain points relating to Russia as a country and the Russian people, as well as to questions with which we are more immediately concerned. To the medical profession the conditions of great cities must always present interesting and attractive features, and the comparison of foreign cities with those in this country affords much food for thought and reflection. The problems that constantly face us, and with which it is a main part of our duty to attempt to grapple, are not only extremely important and difficult to deal with, but often exhibit a most appalling and tragic aspect. The ideas entertained by the mass of our people, who have never ventured beyond these shores, with regard to other nations, are generally as amusing as they are narrow, insular, and erroneous, and they would be very much astonished if they were told that London by no means always compares favourably with many foreign cities, even in countries which are supposed to be mediæval and essentially backward in civilisation. I think those of us who went to Moscow had our eyes very much opened on this matter, and many of our preconceived notions and ideas were rudely swept away, while others were greatly modified and corrected. We would be inclined to agree with Sir Wemyss Reid, who, in an interesting article in the 'Nineteenth Century' entitled "First Impressions," gives an account of a visit last autumn to St. Petersburg and Moscow amongst other cities, and expresses himself as quite taken aback by what he found in the latter city. He writes :—"I had thought of it, as I imagine most of us do, as

the decaying capital of that older Russia which is passing into the stage of tradition—a sleepy old-world city, where ancient customs and national usages still survived, and little beside was to be met with. I found it a huge city numbering nearly 1,000,000 inhabitants, where side by side with the traditional usages of old Russia and, above all, its external devoutness of carriage and demeanour, is to be found the most marvellous development of industrial and commercial enterprise and activity. The streets were as crowded and as full of bustle and life as those of London or Manchester; the groves of tall factory chimneys enveloping the suburbs reminded me of Birmingham. The markets were filled to overflowing both with merchandise and men. The shops were certainly not inferior to those of St. Petersburg, and everywhere there was the bustle, the unending activity which bespeaks the existence of a great community engaged in the full work of life. It was only slowly that what I saw enabled me to realise the truth about Moscow—the truth that it is no city of the dead, no relic of mediæval times, but the living capital and centre of a mighty nation, which, though it may wall itself in against Western ideas and manners, has an overflowing life of its own, and an energy which it is expending freely in a thousand different directions. Those who seek to realise what Russia really is, and what enormous potentialities of growth and development she possesses within herself, must go to Moscow.” Of course, this general aspect of Moscow naturally interested the visitors to the Medical Congress in common with others, but what could not fail to prove specially attractive to them was to observe the marvellous progress and the immense strides which have been made in scientific and practical medicine, and the remarkable developments in the way of hospitals and institutes for the study and treatment of disease from every conceivable point of view. I think I am expressing the general feeling when I say that not only were we vastly astonished, but some of us were consumed with envy, for we could not conceal from ourselves the fact that in many respects even Moscow, to say nothing of St. Petersburg, is medically and surgically far ahead of this great city of London, with its boasted advanced civilisation. The magnificent and splendidly equipped Clinical Hospital at the Dievitchie Pole, with its separate buildings for every department of medicine and surgery gathered together in one place, on an area of between

50 and 60 acres, and constructed on the most approved and advanced sanitary principles, was a revelation to us all of what Russia is capable of. Here were to be seen every kind of modern appliance for clinical investigation and treatment; while there were special institutes set apart for the study of pathology, bacteriology, pharmacology, and other branches, with every possible modern requirement for scientific investigation and research. What a magnificent field, and what an infinite mass of material of every kind for clinical instruction and study, all arranged and classified in the most admirable manner for immediate use! I confess that I could not help contrasting, to our decided disadvantage, this methodical arrangement with our numerous scattered hospitals, where so much valuable material for clinical purposes is absolutely lost, and such excellent teaching is often wasted, or at any rate does not produce its legitimate results, from a want of proper concentration and organisation. With regard to investigations and researches which have for their sole object the advance of medical science and art, need I say that the disabilities which hamper our profession in this country must, while they last, be a continuous check on progress and discovery, and a constant source of resentment and indignation, when we contrast the conditions under which our scientific men work with those which prevail in Russia and other countries, where ignorant, self-seeking, or sentimental faddists are not allowed to have their way, or by their gross and calumnious misrepresentations to mislead the public as to the nature, as well as the aims and intentions, of the investigations carried on in relation to medicine and surgery, by men who have for their paramount aim the well-being of humanity and the relief of suffering. Nor are they at the mercy of a certain class of so-called "statesmen" and "politicians"—I care not to what party they belong—who, in order to catch a few votes, will support any outrageous measure which has for its purpose the prevention or stamping out of rational and legitimate scientific research, and who, when it suits them, treat the medical profession with the utmost contempt.

The subject of operative surgery hardly comes within my province as a physician, and I should not refer to it at all on the present occasion were it not for a personal experience when at Moscow, which I suppose I ought to have looked upon as

a special treat. Speaking generally, I think I may say that the operating theatres in the Russian hospitals are equal in every respect to anything that can be found in any part of the world, while the thoroughness and perfection with which antiseptic and aseptic methods are carried out leave nothing to be desired. Nor could one fail to be struck with the vast number, variety, and ingenuity of the instruments and apparatus for operative as well as other purposes which were exhibited for our inspection. There are also private hospitals in Moscow where operations of various kinds are performed, and these seem to be equally well provided with every modern requirement. Whether such institutions should be imitated or encouraged may, however, be a matter of opinion. It was at one of them that the experience to which I have referred took place. Purely out of kindness, and as an act of hospitality, I was invited to a "private view" of an exhibition of "cerebral surgery." Mr. President and Gentlemen, I did not enjoy it, curiously enough, and as soon as possible made my way out of the operating theatre. I was met by what I can only describe as a mob of men and women, who nearly crushed me in their struggles to gain an entrance into the theatre, and when it could not contain any more, those who were left outside crowded round windows where they might possibly catch a glimpse of the public display of operative surgery which was now about to begin. My hurried flight from the scene prevents me from giving further details. This scene, and the loud applause which I heard on another occasion at the close of some brilliant operations at the Clinical Hospital, and which was rather a shock to one's feelings, gave form and expression to two thoughts which have for some time been vaguely floating in my mind, and which I only dare venture to suggest here, in the presence of eminent surgeons, with the profoundest respect and humility, as well as with fear and trembling. In the first place, is it not just possible that with the immense advantages and facilities possessed at the present day for the performance of formidable operations of various kinds, with the aid of anæsthetics, antiseptics, and suitable instruments of every description, and the truly marvellous skill which surgeons have acquired in numerous directions, there might be a tendency to perform such operations on insufficient grounds, and more frequently than is actually warranted by circumstances? Then I do not think the fact can be denied or

blinked that there exists rather widely a morbid desire or craving to witness what may be fairly termed "sensational operations," or, at any rate, to be present at them, even when it is impossible actually to see any part of the procedure. Such an operation proves so attractive to the modern medical student that it will practically empty the ward or the lecture theatre, and not the most brilliant or popular clinical teacher or lecturer can entice him from the scene, or bring him down to the level of the hum-drum subjects which he will have to face at examinations, or with which he will have to deal in the ordinary practice of his profession. Up to the present I am glad to think that applause after operations, however skilfully and brilliantly performed, would not be tolerated in this country, and I hope it never will be. It would be a mournful day when that consideration and respect for human life and suffering, which have been the glory and boast of the medical profession from time immemorial, should ever be weakened or lost, or when there should arise the least ground for the suspicion that the surgeon's art aimed in any way at rousing the mere admiration of the lookers-on, or appealed in the slightest degree to the modern craving for excitement and sensation.

The remarkable institutions which are met with in different places in Russia, but which have reached their highest development in Moscow, known as "*Maisons des Enfants*," or Foundling Hospitals or Homes, present many points of interest to the medical profession, and I cannot pass them by altogether without notice. Their history and objects are well known, or at any rate can be gathered from any of the books written as guides to Russia. It was a strange notion of an extraordinary woman—the Empress Catherine II—to found an asylum or home for illegitimate children, and whatever the motives might have been which prompted the idea, it cannot be said that its outcome has tended to promote morality, or that the "great care and devotion to infants born to shame and poverty is the highest form of development of rational philanthropy," as Sir Wemyss Reid well puts it. It means the "preservation every year of thousands of lives to swell the great army of want and suffering." The mortality, however, is very high, for which one really cannot help feeling thankful. The number of annual admissions into the Moscow institution now exceeds 17,000, and the history of

its progress clearly demonstrates that its establishment has vastly encouraged illegitimate child-bearing. When paying it a visit, although one could not help being deeply impressed with the marvellous extent and character of the work, the excellence of the arrangements, sanitary and other, the general air of well-being and comfort, the kindly and sympathetic behaviour and actions of all the *personnel*, and especially the thoroughly systematic methods adopted under medical supervision to sustain life and to protect against disease, the sight was not a pleasant one, either from the side of the infants or the mothers, who are practically the nurses, and who certainly did not give one a very exalted idea of Russian women or girls, for a large proportion of them were quite young. Indeed, I agree with Sir Wemyss Reid that it was a "painful spectacle," though at the same time one full of pathos. A particularly objectionable feature to witness was the number of wretched specimens of recently-born infants which they were endeavouring to "incubate" into life. And the sight reminded me that even in this country "human incubators" are just now assuming a disagreeable prominence. It is a dangerous topic to venture upon as to how we should deal with new-born infants who are obviously destined, if they survive, for a life of disease and probable suffering, and in whom the spark of vitality is smouldering to extinction. I yield to no one in my respect for human life and in my tender sympathy and affection for children, but it has sometimes struck me that our efforts to sustain existence under such circumstances as I have just referred to, and others, are not always in the direction of true kindness towards the poor little souls. At any cost I will go so far as to say that if an infant needs an incubator to launch it upon "life's tempestuous sea," such an apparatus ought never to be employed without the most conscientious thought and consideration, and its use always demands the utmost rational discretion. To exhibit an incubator in active work upon a human life in places of public entertainment, which is one of the attractions offered nowadays, does not tend to raise one's estimate of modern humanity, and is only another example of the morbid craving for some new excitement which prevails so widely at the present time.

I do not intend to speak about the remarkable sights at St. Petersburg and Moscow, with their environs, in the way of

palaces, gardens, museums, churches, and monasteries, except to make a brief allusion to the churches generally, and the religious aspect of the people. The costly splendour and magnificence of many of the churches are beyond description, but one could not help feeling that much of the wealth thus lavished might have been better employed in other ways. The Kremlin was, of course, a constant centre of attraction and interest, but some of its churches are more curious than beautiful. The services are highly elaborate, spectacular, and impressive, and the ritual is gorgeous and dramatic. The earnest and devout reverence of the people of all classes, their fervent acts of worship, and their devotion to their religious ceremonies and practices, both within the church and outside, were most remarkable, and sometimes bordered on the grotesque. They seemed to have a profound and unwavering faith, which to an outsider appeared hardly distinguishable from the most abject and ignorant superstition. There were two features in which the churches presented a marked contrast to those of this country. There was an entire absence of seats, and everybody had to stand except when they were engaged in the act of kneeling or prostrating themselves on the floor. Then there was no distinction of persons, but the rich and poor, the well dressed, the working man, and the ragged beggar were all massed together in one common and miscellaneous crowd. I must say that the experience was by no means always pleasant, especially when there was a crush. The odours emitted were certainly not the "odour of sanctity"; and one could not but feel conscious of the special facilities afforded under the circumstances for the conveyance from person to person, not only of infective microbes, but of more easily recognised entomological specimens. A very tragic illustration and object lesson of the possible state of things in a Russian church was afforded by a terrible event which has been reported in the newspapers since the Congress. A consecration service was being held in a crowded village church, when a panic was caused by the cries of "Fire" and "Help" from the outside. Of course the worshippers crushed towards the door, the result being that 74 persons were killed and 160 more or less seriously injured. There was no fire, but as the ventilators had not been opened at first it became necessary to throw open somewhat suddenly both ventilators and windows, whereupon dense clouds

of vapour issued forth from the steaming congregation within, which was mistaken by the crowd outside for smoke, especially as at the same time a blaze of light was produced by the lighting up of all the candelabra. To an outsider religious life and practice in Russia certainly do not present an attractive aspect from a medical point of view, and they can hardly be regarded as contributing to the physical or moral well-being of the people. Nevertheless, during the comparatively recent so-called "agreement" between Russia and China, it was rather amusing to read in an extract from an article in a St. Petersburg paper that Russia was going into China as "the standard-bearer of Christian culture and civilisation." I wonder how the Chinese will like it!

The problems that present themselves in relation to great cities as regards their material, sanitary, social, and moral conditions, and the evils to be contended against, are in the main common to all, and are but too familiar to us as a profession in this vast London. Taking a comprehensive view of our metropolis, and comparing it with foreign cities, I can only give vent to my own feelings by saying that it is a most contradictory, inconsistent, aggravating, and tantalising place. No one can deny for a moment that, apart from its unavoidable climatic drawbacks, it has attractions and advantages which can be found nowhere else; and some of these come into conspicuous prominence after a visit to such cities as St. Petersburg, Moscow, and Warsaw. Amongst others one seems to breathe a freer air, and to be relieved of an indefinable vague sense of unrest, insecurity, and danger, which amidst all the courtesy and kindness shown to us I think many visitors to the Congress could not help feeling conscious of when in Russia. It may be a question, indeed, whether freedom in London, in common with every other part of this country, is not carried rather too far, and whether sometimes "liberty" is not allowed to degenerate into "licence." The fact cannot be ignored that not only in London, but in many other cities and towns within this realm, rowdiness, ruffianism, and acts of robbery with violence in our public streets, even in broad daylight, are greatly on the increase, so much so that one of the metropolitan magistrates spoke strongly not long ago about what he called a "reign of terror" in his district. I really think it is safer to walk in the streets of St. Petersburg or Moscow than in many parts of this city. Moreover, whether we are doing the

right thing in permitting indiscriminate alien immigration to the extent which is at present the rule is a matter for serious consideration. Apart from other aspects of the subject, I have been recently informed on reliable authority that in certain districts, not in the "East End" either, they have to be constantly fighting against the most disreputable characters, who pour in chiefly from Russia and Poland, and who manage to get possession of houses of ill-fame as rapidly as they are closed, carrying on the most nefarious practices, and being an intolerable nuisance and curse to the neighbourhood. Surely such a state of things ought not to be allowed to continue for one moment, and it is but fair to the inhabitants of London that some discrimination should be exercised as to the kind of people who are welcomed into our midst. And in this connection I cannot refrain from uttering an energetic protest against a crying evil which constantly stares us in the face in this immediate vicinity, as well as in other districts, and which has reached such a pitch that even the clergy are roused to denounce in the daily press what they rightly term "a grave scandal." I allude to the extraordinary laxity shown by the public authorities in permitting the most shameless and repulsive women to parade our principal streets and thoroughfares in open day, especially at the time when they are most frequented, to flaunt their calling in the most ostentatious manner, and to molest passers-by with their solicitations. Most of these creatures are also obviously of foreign importation, and what they must think of a great city which actually seems to invite them to a line of conduct which would not be tolerated for one instant in any other civilised city in the world, I really cannot imagine. Efforts are being now made in many quarters to promote purity, and not only have we the most cordial sympathy with such efforts, but we must not mince matters, and it is time for us to speak out plainly and boldly. Let us be consistent, however, and practise a little common sense by doing our utmost in the first instance to put down temptation in every form. We shall have no difficulty in emphatically endorsing a resolution passed at a recent influential meeting held at the Guildhall in connection with a "special crusade" against gambling, intemperance, and impurity, calling for immediate action on the part of all good citizens and of the Legislature, with a view to effecting, amongst other reforms, the "promotion of energetic action on the part of the police

authorities for the suppression of street solicitation." In one of the letters emanating from the clergymen already referred to they say: "We are more than ever persuaded that the time has arrived when the properly constituted authorities should take the needful steps to remove an evil which is a decided blot upon the social system of a great Christian city." This seems to me to be an exceedingly mild way of putting the matter. They are more practical when they write: "May we not also reasonably expect that the evils to which we directed attention (in a previous letter) may induce some action on the part of the public authority to protect passengers of both sexes from interference whilst they are making lawful and proper use of the public thoroughfare." The Bishop of London, speaking on the "Promotion of Purity" at a conference held not long ago, remarked that it was always possible to get a high-minded and God-fearing physician who was ready and willing to speak to men—and, above all, to young men—about the temptations to which they would be exposed, and whenever this had been done in his experience it had always been productive of the best results. This, no doubt, is true, but I fancy there are few of us who possess the qualifications necessary for carrying out such a work successfully and efficiently. We can all, however, unite in expressing our utter condemnation of the existing state of things in the capital of this great country, and I have thought it my duty, as fairly coming within the scope of my subject, to give vent to what I venture to believe must be the unanimous feeling and sentiment of this Society, and of the medical profession at large, with regard to a grave and pressing evil, and to join others in strenuously urging upon our public authorities, whoever it may concern, the imperative necessity for immediate and radical reform, in order to sweep away a scandal which is not merely a "blot upon the social system of a great Christian city," but which must sap the very foundations of decency, morality, and order in any civilised community.

The question of intemperance is a very pressing one in Russia, and it was interesting to meet in Moscow a few who, like many temperance reformers in this country, strive to influence those with whom they come into contact by their personal example, being strict total abstainers. I have recently seen an announcement that the enormous increase of intemperance has led the Russian Government to take the question into its own hands, and

as a first step the sale of spirits in the country is gradually being turned into a Government monopoly. The Government is also directing its attention to counter attractions to the public-house, and has appointed a "temperance curatorium" in St. Petersburg, one of whose duties is to provide these. Here is a useful hint to our legislators and to the authorities who have to contend with the same evil in this country. It seems to be a general belief that drunkenness is far more prevalent in Russia than amongst our people, but from what I have seen and heard I am not at all sure that there is any real foundation for such a notion. At any rate, we cannot boast that the inhabitants of any part of the United Kingdom are models of temperance, and we are not in a position to throw stones at any other nation. The sights that constantly obtrude themselves upon us in London, even in the "West End," are disgusting and appalling, and I confess that they often produce in me a feeling of profound humiliation, as well as of utter impotence, hopelessness, and despair. And yet how can we wonder at the state of things when we observe the temptations and attractions presented on every hand, as contrasted with the so-called "homes" of the people, in the shape of luxurious public-houses, which almost vie with the Russian churches in their gorgeousness and magnificence. It may be interesting to note that the Russian working classes appear to be much more methodical in their drinking habits than our people, with whom, by the way, they compare by no means unfavourably in appearance and manners, so that the effects of excessive indulgence may not interfere immediately with their regular employment, and I fancy that the Government has something to say in this matter also. Judging by current events it does not look as if the drink traffic in this country is likely to be controlled or checked in any way for many a day to come. This is easily explained, not only by the inherent sentiment planted in the breast of every "true Briton," that he will never, if he can help it, permit what he calls his "liberty" to be interfered with, but also by the powerful individuals and combinations of persons who are directly or indirectly interested in this traffic, by the enormous fortunes and large dividends which it yields, and by the too tempting contribution which it makes to the revenue. It must be acknowledged that this state of affairs does not strike one as being altogether satisfactory or gratifying. I certainly am no advocate

for entering upon the impossible task of trying to make people sober by "Act of Parliament" or any other compulsory method, except in the case of habitual inebriates, nor should I like to see any meddling interference with fair dealing in alcoholic drinks, but as medical men we cannot shut our eyes to the practically unlimited facilities and encouragement given for the abuse of alcohol and the establishment and continuance of intemperate habits, not only in this city, but in the country at large, and of the terrible consequences resulting therefrom. Here, again, surely "liberty" has been allowed to degenerate into "licence," and it is our duty so far as lies in our power to support every rational measure which has for its object the promotion of sobriety, coupled with a due recognition of the established and legitimate rights of those who deal in articles of commerce which, when used intelligently and in moderation, are, in my opinion, not only harmless, but capable of contributing in no small degree to the comfort and well-being of the human race.

I have thus far been dealing with the more glaring evils in this city and country which a comparison with Russia brought prominently before my mind, but I must still note some minor points in relation to London in which we are lamentably deficient, and where we might learn many a valuable lesson from other capitals. The causes of these defects are many and various, but they are obvious enough, though at the same time by no means easy to overcome. Amongst them may be mentioned the obstructive influences associated with long-established "rights and privileges," vested interests, monopolies, and corporations; conflicting opinions and interests of official bodies; a complete want of any comprehensive or controlling organisation; feeble and often ignorant though thoroughly self-satisfied vestries; general apathy and an indisposition to make any effort against existing abuses, but to let things slide—a failing to which we are all very prone; individual self-seeking and absolute selfishness, without a spark of consideration for others; and, I have a strong impression, no small amount of "jobbery," as well as "bribery and corruption," in many directions. There can be no doubt that the laws and regulations intended to benefit the community at large are often tacitly ignored, or even treated with open contempt and defiance; and it has struck me that a short experience of autocratic government might do us no harm, and help to put

matters right. Comparing London with Moscow, I have been told on good authority that the latter is about the most insanitary city in the world, and I can quite believe it. Certainly one could not help noting a general objection to fresh air and ventilation, and, as a rule, an absolute neglect and disregard of all sanitary conditions, precautions, or regulations. In these respects no doubt we are on the whole far in advance, not only of Moscow, but of many other cities, though there is still much to be desired. Indeed, have we not frequent revelations showing that, not only in London, but in many other cities and towns, as well as in rural districts which nature has made lovely and beautiful, the most elementary sanitary laws and conditions are absolutely ignored, and if the descriptions given are true, we have quite recently had brought prominently under our notice in the press a state of things in one of the neighbouring counties, which can only be fitly characterised in the words of the 'Times' as "grave scandals" and a "disgrace to civilisation and humanity." Taking a superficial view of things Moscow appeared to be decidedly cleaner than London, and as for the lighting of the streets, we are not in it. Indeed, I am afraid that our metropolis has an unenviable reputation for being dirty and badly lit, and our friend and would-be reformer 'Punch,' in his last Christmas number, includes among what he calls "Some Christmas Waits" — "A system of illumination and purification of the London streets which shall be at least equal to that of the second-class European capitals." Those of us who reside in this locality are thoroughly familiar with these two defects, but we must not altogether hide our light under a bushel, for there is one example of strenuous, if misdirected, energy which really deserves publicity, though I must say I have witnessed the same performance in Moscow and other places. We must not, however, withhold the honour specially due to London, and to the Marylebone Vestry and sanitary authorities in particular. Given a series of wet, filthy, muddy days, the streets are left absolutely untouched, and even the professional crossing-sweepers are then generally conspicuous by their absence. To cross Portland Place or Harley Street, for example, under such circumstances is an experience neither good for the "outward man or woman," nor for the temper. But let there come an absolutely dry day, with a high wind, and heaps of dust, mixed with an abundance of desiccated excrement and expectoration,

and then you will find some ten or a dozen lusty men vigorously sweeping these and other thoroughfares, and choking the passers-by with the volumes of a choice and miscellaneous assortment of microbic and other abominations which they raise by their efforts. The *rationalè* for this performance is not evident at first sight, but it has occurred to me that it might possibly be intended to promote the interests of the medical profession in this neighbourhood, by exciting disease and spreading infection, as a slight return for our help in so greatly enhancing the value of property, and our large contributions to the Imperial taxes and the local rates!

There are other aspects from which London might be fairly criticised, even as compared with Moscow and other cities supposed to be far behind in civilisation, but time warns me to forbear. I will only mention the matter of overcrowding, which is further so often associated with obvious and sometimes the most revolting insanitary conditions, which ought not to be permitted for one instant. All this, of course, is perfectly well known in a general way, but the disclosures made from time to time in the newspapers, especially in connection with inquests, are truly shocking and appalling. In the course of a discussion a short time ago my friends Dr. Corfield and Dr. Poore both agreed in letters to the 'Times' that the huge infant mortality in London is mainly due to overcrowding. Surely this state of things might easily and ought to be kept somewhat in check, at any rate, and Dr. Poore well writes: "Is it not time to do something to try to arrest the overcrowding in London instead of regarding it with complacency because there happen to be more unhealthy cities elsewhere?" Whether the solution of the difficulty advanced by this eminent authority in sanitary matters is correct or not I do not feel competent to judge, but my impression is that the millennium is not yet in sight, and will not come in our day.

I hope, Mr. President and Gentlemen, that I may not be regarded as having gone beyond my province in the preceding discussion of some of the aspects of London with which we, as a profession, are immediately concerned, and in which we have a direct interest. I hold it to be our duty on every possible occasion to bring prominently before the public any glaring scandal or abuse, as well as minor imperfection in our social system, which tends seriously to impair the health or to interfere with the well-

being of the community at large, without regard to class or station in life. Personally I felt that this was a legitimate opportunity, of which I might justly take advantage. Not that I flatter myself that my remarks will have the slightest practical outcome or effect. Things will go on just as before, and we must merely await as patiently as we can the results of enlightened progress. I know not whether we are to be governed in the future by the "county council" or by separate "municipalities," nor do I feel competent to express any definite opinion as to which is the better method. We can only trust in Providence, and hope that, to whatever body or bodies may be entrusted the control and guidance of our affairs, they will bring to their great and noble task intelligent thought and consideration, founded on due knowledge and experience, honesty of purpose, and an earnest desire for the welfare of their fellow citizens.

Mr. President and Gentlemen, this is the age, amongst other characteristics, of vast association meetings and congresses of all kinds—national and international—and the questions have been raised whether these gatherings are of any practical value whatever or serve any really useful purpose, and whether they should be maintained? I have read some particularly disparaging comments with regard to their social developments, and they have even been compared to "huge picnics." So far as international medical congresses are concerned, although for obvious reasons there is no actual necessity for them at the present day, yet it would be a pity to abolish them altogether. If they do nothing more, they may possibly form a link to bind nations and peoples together in unity and concord, and to promote peace, it may be, when "relations are strained." But, further, my own opinion is that while they certainly are capable of working infinite mischief, on the whole they do a tolerable amount of good, in the way of guiding the profession generally into right channels—sometimes at critical epochs; of promoting and developing that which is worthy of encouragement and support; of bringing into prominence novel discoveries relating to the science or art of medicine and surgery which are of real merit; and, on the other hand, of keeping in check, or entirely suppressing if need be, any tendencies which are detrimental to the true dignity and advancement of our profession, or to the practical interests of those with whom we have to deal as patients. As regards the

Moscow Congress, from what I have previously stated it may be gathered that its outcome has not led immediately to anything very remarkable or striking. It was not, so far as I know, signalised by any unusually brilliant or sensational incident from a medical or surgical point of view, or by the announcement of any startling discovery. For this I feel personally profoundly thankful, for my firm impression is that the medical profession has at the present time quite enough material for investigation and study to engage the attention and best efforts of its most able and energetic members for many a day to come. Nor, I am glad to say, did this gathering afford any undue encouragement to certain modern ideas and tendencies, which cannot fail to give occasion for anxious thought, not unmixed with foreboding, to those who have the true interests of our vocation at heart.

After some hesitation I have come to the conclusion that my text fully entitles me to call attention to some of the more pronounced of these tendencies, and to offer a few comments upon them, which, of course, only express my own personal views. In the first place, there is the now somewhat stale question of "specialism," which is always with us, but the process of "splitting up" is still going on, and where it will end it is impossible to say. I will merely remark that it has already reached a pitch which can only be described as ridiculous and absurd, and that the incalculable mischief which it is working must be obvious to any rational and disinterested observer. Then there is the tendency which undoubtedly exists to run certain branches of medicine almost entirely on so-called "scientific" lines, with little, if any, regard to their practical relationships or bearings. This is all very well for gentlemen who spend their days in the calm retirement of some quiet laboratory, enjoying the satisfaction and delight which scientific research, with its marvellous results and achievements, must always afford. But it is a very different matter for the active practitioner or physician, who has to study and combat disease in its manifold manifestations and combinations in actual living patients, with all their personal idiosyncrasies and individualisms. The tendency is also evident in the education and training of medical students at the present day, for whom the more scientific branches of study naturally possess decided attractions. It will be an evil day, however, for the medical profession should this tendency be unduly encouraged

or developed, or should those who are preparing for its active duties be taught to ignore or make light of its more practical problems and aspects.

No one who has watched the progress of events can fail to be struck with the advances and remarkable discoveries which have been made during recent years in the science and art of therapeutics. This very fact, however, has led to certain developments, for which we as a profession are more or less responsible, and which are even now doing much harm, while they give occasion for serious anxiety as to the future. In the first place, there are the extraordinary ideas now so widely prevalent with regard to supposed "cures"! I have even met with medical men who have rather wild notions on this point, but I hardly imagine that any rational and honourable member of our body would go quite the length which a very large proportion of the laity have reached. Their views are that a patient invariably suffers from some disease as a distinct entity, that every such complaint must have its cure, and that it is our business to find it out and practise it. Hence they are ever on the look-out for some sensational discovery, or some novel line of treatment, which shall serve the desired end in relation to this or that complaint. If one is not "up-to-date" with regard to the newest and most recently advanced "cure" for the more familiar diseases—for example, typhoid fever, influenza, or phthisis—and unless one is acquainted with every "advertised remedy," generally recommended by some individual of no scientific or professional standing or, it may be, utterly unknown to fame, he is looked upon as being "behind the times," and only fit to be shelved. I can affirm from personal knowledge that not a few have a fixed idea that when we go to a Medical Congress our object is to bring away with us, actually or potentially, definite "cures" for various complaints, the outcome of the collective wisdom of those who take part in its discussions, and they cannot understand otherwise what business we have there at all. As intimately associated with this idea comes the bewildering succession of new therapeutic agents with which the drug-market is being constantly inundated, and with every one of which we are expected to be familiar. No doubt many of them are useful for particular purposes, but very few become permanently established as really valuable remedies. Another most mischievous practice, to which we cannot shut our eyes in

these days, is the tendency to run some special line of treatment, which happens to be "the fashion" at the time, for every case belonging to a certain class of diseases, without judgment or discretion or any rational consideration as to its appropriateness in individual instances. I have found by bitter experience that, unless you are prepared to fall in with the prevalent views, and to advise or practise such treatment under all circumstances, even against your better judgment, conviction, and conscience, the public will have none of you, and again you are delegated to a "back seat." To sum up the whole matter, patients and their friends have been taught to believe that no matter what the conditions may be with which the medical practitioner has to contend, modern science and skill ought to be able to cure them straight off, or at any rate to relieve their sufferings under every possible combination of circumstances, and they, as a rule, expect that these results can be achieved by a mere "prescription" or a "bottle of medicine!"

There is still another tendency to which I must refer, and which, if persisted in, is likely to lead to more and more trouble as time goes on, and that is the temptation to give expression and utterance to prophetic assertions, predictions, and promises, with regard to prolongation of life, eradication of disease, marvellous improvement in the health of individuals and communities, and so on. For the world at large the outlook is truly rosy, but for the medical profession it is black indeed, seeing that its members will "have no work to do," and in process of time it must inevitably become extinct. It goes without saying that every one of the infectious complaints will be completely routed and annihilated even within a short period, and in the meantime every human being shall be so inoculated as to be rendered immune against the whole lot. Gone will be the days of "stirring epidemics of influenza to blow big dividends" to a certain company! I have seen a statement in print that two of the most eminent authorities in our profession, gentlemen for whom I have personally the highest esteem and respect, although compelled to differ from them, have expressed their firm conviction that pulmonary phthisis will be eradicated—one says within 200, and the other within 50 years. I have often been amused as well as amazed with the glowing prophecies made in irresponsible lay newspapers and periodicals or journals, and with their almost

hysterical outbursts about the "advances of science," the "marvellous achievements of medical skill," and similar "tall talk." That does not signify, however, very much, and we cannot prevent such effusions. But when the influential medical press indulges in the same theme beyond what is strictly in accordance with facts, or when some well-known and prominent scientist or physician paints a radiant picture of what is going to happen even in the near future, it is a very different matter. The laity naturally believe them and pin their faith on their statements. Then follows disappointment, not unmingled with resentment, that the predictions do not come true, and that the millennium does not arrive. And yet, Sir, it does not. The contagious affections are still amongst us and in full force, and we are from time to time startled by the breaking out of a virulent epidemic of some grave disease of this nature which we had flattered ourselves had been practically exterminated, and which we find it almost impossible to check or to cope with successfully. And this does not result from any want of knowledge as to how to deal with these complaints and how to prevent them, or of devoted skill in treatment, but from the mere force of circumstances, which are obvious enough. The fact seems to be that those who make what I must term rash predictions do so from an entirely theoretical, scientific, or "laboratory" standpoint. They appear to forget altogether the inevitable conditions of existence and social life, among civilised perhaps even more than uncivilised communities, and they also ignore entirely such factors as human weakness, appetites, lusts, passions, and selfishness. Do not let us be led away with exaggerated ideas and expectations, and imagine, for example, that because the tubercle bacillus has been discovered such a disease as pulmonary phthisis will soon be a thing of the past. We may strive as a profession, as we do, to our honour be it said, to promote the adoption of every preventive measure at our command, we may go so far as even to try to stop people from kissing, as well as expectorating just when and where they please, but I venture to predict (and at any rate I am safe in doing so, seeing that no one now present will have the chance of contradicting me when the time comes) that so long as the world lasts consumption will still be one of the chief scourges and dreads of its inhabitants.

In the preceding remarks it has not been my intention to say

one word against rational progress in relation to the subjects which I have discussed, or the adoption of any method or measure which can be of real service for purposes of clinical investigation and diagnosis, or for the prevention and active treatment of disease. By all means let us do all in our power to promote sound health and the general well-being of humanity, and to encourage them to take a hopeful and optimistic view of the future, so far as is consistent with common sense and actual hard facts. But let us never forget that we have to protect our patients and fellow creatures against themselves, if I may so speak, as well as against numerous dangers from without. A moment's consideration will show that the tendencies against which I have been uttering my feeble protest afford direct encouragement to, and open up unlimited opportunities for charlatans and quacks of every kind. We must charitably assume that there are none actually within the ranks of our profession who come under this category, and yet it now and then happens that the General Medical Council find it necessary to remove from the register one of its members for downright and unconcealed quackery. Not that in the scandalous and at the same time humorous state of our laws with regard to practitioners of medicine—as contrasted with the legal profession, who take very good care of themselves—it makes the slightest difference to the individual so expelled, unless it be in his favour, for he can go on just as before, or even with additional *kudos*, posing as the victim of professional injustice and jealousy. And then comes the matter of advertisements. Really, Sir, what is the use or advantage of any Congress or even of this venerable Medical or kindred Societies, with their regular meetings, reading of papers, and learned discussions, when in almost any lay, not to mention pharmaceutical or medical, paper you will find not one but any number of “cures” and “remedies” recommended for every possible disease or symptom, now frequently with the additional attraction of the photographs of grateful patients before and after treatment? Even such a journal as the ‘Times’ sometimes inserts advertisements of which I hardly think those who are responsible realise the significance. Not long ago I cut this advertisement out of the most prominent column on the front page of this leading newspaper: “Dr. [a foreign name, but not Koch] has discovered the Bacillus of Tuberculosis and is able to heal this malady.” Then we are informed that “the Court

Physicians" prescribe a certain preparation for our "Royal Family" which, of course, has the power of curing every "ill that flesh is heir to"! But of all the advertisements, usually supplemented by the most flagrant and grotesque "puffs," which are a scandal to this country and to the present "enlightened" age, none approach within measurable distance in barefaced impudence and downright misrepresentation those found in much of the so-called "religious" or "Christian" press! These papers wholly belie in this respect the titles they have appropriated, and make one feel almost ashamed of words with which we are accustomed to associate all that is true and great and noble. They are more especially the means of propping up and foisting upon the public that particularly offensive species of the genus "quack" who, under the guise of religion and religious motives, is allowed by our laws to prey unchecked upon ignorant and confiding simpletons, by pretending to have discovered a "specific" for some grave and widely-distributed malady, which he will dare to hold out as a "certain cure" even at the last extremity, when death is at the very door! I affirm that which I have actually seen. No wonder such creatures amass large fortunes. These advertisements and puffs are then passed on to some of the so-called "Society" papers, and so the game goes on! It behoves us as a profession to give thoughtful consideration to the question how far we are responsible for these and kindred evils, and to be particularly careful at the present time not to encourage them in the least degree by any mistakes on our part.

There is another aspect from which we need to be specially cautious and circumspect just now as to what we say and do, at any rate in this country. It is but too evident that our profession is being watched with suspicious and unfriendly eyes from more than one quarter, that our words and actions are being subjected to severe and hostile criticism, and that some of our most cherished and deeply-rooted doctrines and practices are being vigorously attacked by powerful individual and combined forces. Certain people seem to think it their duty and calling in life to take every opportunity to oppose whatever we try to do for the good of humanity, and for the real advancement of medical science and art, and they are ever on the look-out for some malignant plot of medical Jesuitry. The fact must not be ignored that even within our own ranks there are men of ability and of high scientific

and practical attainments who honestly and conscientiously differ from the vast majority of their brethren on important questions, and whose actions are governed accordingly. We can only regret that such should be the case, but at the same time must treat them with consideration and respect. But what we have chiefly to contend against are the numerous and weighty outside influences which combine together so far as lies in their power to bar all progress, to crush scientific investigation and research, and to wreck every measure which the medical profession as a body, with but few exceptions, demand as essential for the prevention and extermination of some of the most grave and terrible diseases which afflict the human race. Many of our most bitter opponents occupy high social positions, and they may be, so far as I know, in their own spheres well informed and clever people. They may even have acquired a smattering of physiology, or dabbled in medical works, and the vague and superficial knowledge they have thus obtained makes them conceited enough to imagine that they are thoroughly qualified to give a dogmatic opinion upon every conceivable subject relating to health and disease, as they are indeed quite prepared to take charge of the affairs of the world in general. But the great mass of opposition which we have to face consists in a combination, in various forms and degrees, of unreasoning prejudice, personal interests which brook no interference, sheer faddism or fanaticism, misguided sentiment, downright ignorance, and consummate impudence and conceit. When any of these obstructive forces are associated with power for active mischief, be it but that of a chairman of a board of guardians, the results are very likely to be most injurious or even disastrous to the cause of humanity. I repeat, therefore, that in face of these embarrassments we must be ever wary and careful as to our sayings and doings, avoiding everything than can rouse needless opposition or excessive friction, and giving no occasion for those whom we are compelled by their conduct to regard as our enemies to gain any advantage over us, or to cast ridicule upon our claims.

In bringing this address to a close may I be permitted to refer briefly and comprehensively to what I conceive to be the real objects which such an authoritative and august gathering as an International Medical Congress should have in view, and what practical purposes it is intended to serve? Surely it must never

be regarded as a mere passing event, which leaves behind no permanent impression or result. In general terms a congress of this nature may be described as intended to promote those aims which we as a profession, individually and collectively, always keep steadily before us, notwithstanding our differences of method, and in spite of all opposition and difficulties, and by mutual instruction, help, and encouragement to render each one of us better fitted to carry out efficiently and intelligently the high functions and noble duties of our calling. And what are they? First and foremost comes the formidable task of diminishing mortality, of preserving and saving life, and prolonging its duration, so far as this purpose is consistent with the fitness of things. As a matter of fact, we instinctively do our utmost under every possible circumstance to avert death, and there is no more sad or trying ordeal for the practitioner of medicine to pass through than to see a young and promising life, or one in the full prime and vigour of manhood, engaged not uncommonly in active and useful work, and, alas! but too often the family "breadwinner," cut off by some dire disease which defies his best skill and most devoted efforts. Our surgical colleagues have a great advantage over us poor physicians in this matter, and I frequently envy them when I think of the thrill of satisfaction and pleasure which the skilful operator must feel, especially at the present day, when he calls to mind the lives he has personally saved. But the mere addition of two or three years to the average duration of existence, or the prolongation of the life of one bowed down by the ravages of time or with constant pain and suffering, does not appeal to me as the supreme duty of the medical profession, and I have no sympathy with some of the ideas now in vogue with regard to the attainment of longevity. I hold in my hand a summary of instructions as to how to live to be a hundred! I wonder who wants to spend a hundred years in this weary world, unless it be that conscience makes him afraid of venturing on the next! Other prominent objects which as a profession we are always striving to fulfil are the cure of particular diseases; their prevention, both among individuals and communities; and their extermination so far as this is practicable. Then I need but mention the wide field that is open before us, and the constant call that is made upon our knowledge and skill, in our attempts to relieve pain and suffering of every kind. But I venture to

think that perhaps the most difficult problem with which we have to cope at the close of this nineteenth century, and one worthy of our supremest efforts, is how to deal with the mass of "morbidity" and "invalidism," the countless "ailments," real or imaginary, call them by what name you like, which crowd upon us on all hands and in every station of life, which render thousands upon thousands unequal to the ordinary avocations and duties of modern existence, which wreck the comfort and happiness of many a home, and which often become the starting point of pernicious habits that are sapping the very foundations of society in many directions, and if not checked must inevitably lead to widespread disaster.

What will be the ultimate practical outcome of the occasion which I have utilised as a text for my address cannot as yet be determined. We may reasonably hope that it has had some influence in creating a kindly and mutually considerate international feeling at a period in the world's history which is fraught with grave issues. Surely, moreover, it cannot fail to leave its mark upon the history of the progress of medicine and surgery, and to promote in no small measure the all-important objects to which I have just referred. At the present moment we cannot shut our eyes to the disquieting fact that the relations between Russia and Great Britain are such as to cause serious anxiety with regard to the course of events even in the immediate future. We must all earnestly hope, however, that diplomatic statesmanship, aided by mutual consideration and a conciliatory spirit, may be able to guide us safely and successfully through all dangers and difficulties, so that "peace with honour" may continue between these two great empires. Their power for good upon vast masses of people, when acting in concert, it is impossible to over-estimate; while the beneficial results which may be anticipated from their combined efforts in the cause of civilisation and human progress are incalculable. On the other hand, the bare suggestion of war calls up scenes of horror, devastation, and desolation, with inevitable disastrous consequences to both nations, from which even the most hardened and thoughtless must instinctively shrink. Whatever may be the immediate and final results, international and professional, of this memorable cosmopolitan gathering, and whatever may happen in the future, I believe I am expressing the feelings and sentiments of my fellow-countrymen who were

present and took part in its proceedings when I affirm, that while time will dim more and more any passing impression of experiences not altogether agreeable which may have occurred to us as individuals, until they are absolutely forgotten, there will always remain a vivid mental picture of novel, attractive, and interesting scenes, as well as of manifestations of kindly feeling and generous hospitality, and we shall one and all ever entertain a grateful and pleasant reminiscence of the Moscow Congress.

CLINICAL EVENINGS.

November 8th, 1897.

TWO CASES OF MITRAL STENOSIS.

By the President, A. ERNEST SANSOM, M.D., F.R.C.P.

Case I.

A GIRL, aged 10, who had recently suffered from rheumatism. The area of cardiac dulness is increased both to the right and to the left of the normal area. A heaving impulse is felt with the ventricular systole over the *right* ventricle and not over the left. A thrill is felt to the right of the apex, but this thrill does *not* terminate abruptly. A systolic bruit is heard at the apex, but this does not replace the first sound; this, the first sound, is loud and has the character of a *snap* or *tap*. A short presystolic murmur is heard within the apex.

The case illustrates an early period in the pathogenesis of mitral stenosis. Probably rheumatic endocarditis is still in evidence, and there is some mitral regurgitation from this cause. The physical signs, however, show that mitral stenosis is the preponderating lesion.

Case II.

The patient, a woman, aged 20, presented the following conditions:—

Heart.—Area of dulness slightly increased on right side. Apex beat diffuse. A *slapping first apical sound* is followed by a prolonged murmur, unmodified by respiration. Murmur has maximum to right of apex and fades off to left. Is heard at angle of left scapula. Aortic second sound heard at apex.

Abdomen.—Nothing felt, maximum tenderness in pit of stomach. Has vomited blood twice considerably, *i.e.*, a pint at a time.

Has had rheumatic fever three times, first attacks in childhood followed by dropsy. Last attack nine weeks ago.

Urine—Nil. History of blood in urine when a child.

The patient has long manifested many nervous symptoms as well as dyspepsia.

Dr. SEYMOUR TAYLOR, referring to the President's observation on the view taken by French observers that there was an obstructive form of mitral disease not associated with rheumatism, asked whether any of the cases on which their conclusions were based comprised a history of chorea. He added that in his own experience these lesions occurred as often after chorea as after rheumatism, a fact which he thought was now generally recognised. With reference to the case before them, he said he thought there were other symptoms than the murmur to guide them in arriving at a diagnosis of mitral stenosis, indeed the murmur of regurgitation overpowered the other, and he preferred to close his ears, so to speak, and to take his stand on the collateral manifestations of obstruction at the mitral orifice. He said he thought he could feel through the patient's ribs an enlarged left auricle. He had understood the President to suggest that later on the snap of the first sound would very likely be replaced by a murmur, but his own view was that there had probably been a murmur in the past which was replaced by the snap, the murmur not being present owing to the deficient vis a tergo of an enfeebled left auricle. He alluded to the benefit which such patients had derived from dry or wet cupping over the chest and elsewhere.

Dr. F. DE HAVILLAND HALL commented on the observed fact that patients suffering from mitral stenosis did not bear digitalis well, and he suggested that in doubtful cases this difference in the action of digitalis might assist them in arriving at a correct diagnosis. Some years ago he had collected a series of cases of mitral stenosis which he believed not to be associated with rheumatism, but since he had learned to recognise how transient the rheumatic manifestations might be, and how in some cases the disease appeared to concentrate its effects on the heart without affecting the joints, he had come to the conclusion that although there might be cases of mitral stenosis which had not a rheumatic origin, it must be very difficult, if not impossible, in a given case to affirm the absence of any rheumatic source.

The PRESIDENT, in reply, said he thought that some of the French observers were disposed to exclude rheumatism altogether in respect of cases of pure mitral stenosis. He explained that he must not be understood to say that he thought there was no mitral stenosis except that produced by rheumatism, but he did think that was by far the most frequent factor in its production. Some French observers had sought to drag in tuberculosis to bolster up their case, and he referred to the 'Clinique de la Charité,' by Potain, which contained an exceedingly interesting and instructive series of observations by Dr. Pierre Teissier, also to the work of Duroziez published by Steinheil.

CASE OF PARTIAL CRETINISM : CRETINOID PHYSIQUE WITHOUT MENTAL DEFECT.

By W. S. COLMAN, M.D., F.R.C.P.

THE patient, Leah H., aged 10, came under observation in June, 1897, and had not been previously treated, with thyroid gland. She was then $9\frac{1}{2}$ years old, weighed 2 st. 2 lbs., and was 2 feet 10 inches high. Her legs were short; there was lordosis and prominence of the abdomen. The hands were square, but not very clumsy. There were fat masses in the anterior triangles which have disappeared under treatment. The lips were a little thick, but her expression was lively and intelligent. She is in the Second Standard at school. During four months of thyroid treatment she has grown $2\frac{1}{2}$ inches, and the fat masses have practically disappeared from her neck.

Dr. FLETCHER BEACH said this was the first case he had seen or heard of, of cretinism apart from mental defect. He had tested the child's intelligence and found it well developed, and he commented on the fact that even before the thyroid treatment was commenced she was already in the Second Standard at school. He himself had collected a series of 137 cases of cretinism, and in not one of them was the intelligence unaffected. He insisted on the interest the case presented in view of future cases.

The PRESIDENT observed that this case seemed to open up a great field for future inquiry, for possibly many such cases of trophoneurosis might be met with.

CASE OF SPORADIC CRETINISM CURED BY THYROID EXTRACT.

By J. WALTER CARR, M.D.

FAMILY and previous history unimportant. Patient was admitted to the Victoria Hospital for Children in February, 1896, being then 5 years old. She presented a typically cretinoid appearance: height 30 inches, weight $24\frac{1}{2}$ lbs., hair coarse and scanty, skin dry, no sweating, hands broad, temperature slightly sub-normal, abdomen very protuberant. Mentally she was very deficient; she could walk a little, but took no notice, and could only say a very few words.

At first she was given one 5-grain tabloid of thyroid extract (Burroughs and Wellcome's) every day, but as this caused some fever (temperature 102°) only half a tabloid was given.

Gradual improvement set in, she sweated very freely, the pulse got faster, and the temperature became normal; her weight fell at first to 20 lbs., then very slowly increased; the cretinoid aspect disappeared and the intelligence improved.

She has continued to take the thyroid extract, but in much smaller quantity; for the last four months she has had only one $1\frac{1}{2}$ -grain tabloid every third day.

She now appears to be a healthy intelligent child; height $37\frac{1}{2}$ inches, weight 37 lbs. She goes to school and makes fair progress, though still backward.

No thyroid gland can be detected.

TWO CASES IN WHICH TUMOURS HAVE ALMOST DISAPPEARED AFTER THE INJECTION OF COLEY'S FLUID.

By C. MANSELL MOULLIN, F.R.C.S. Eng.

Case I.

H. K., aged 28, admitted into the London Hospital, November 27th, 1895, for swelling in groin, which had been noticed four weeks. The swelling occupied the right iliac fossa, extending deeply on the inner surface of the pubes. It was firmly fixed, not fluctuating, rather tender and underneath the iliac vessels. There were four enlarged glands over it. The skin was not affected, and did not pit upon pressure.

The patient appeared ill, and his temperature was irregular. On December 4th half a minim of fluid, kindly sent me by Dr. Coley, was injected. The temperature that evening was normal, the next morning 106.8° . A second injection of 1 minim was made that afternoon without any result beyond reddening of the skin. On the evenings of the 6th and 7th the temperature rose to 102° , falling afterwards to normal. After this, injections were made every second or third day, gradually increasing to 6 minims, with the most capricious results. Thus, on December 21st, 24th, and 27th, 6 minims were injected without effect, while the same quantity on the 28th was followed by a rigor and a temperature

of 102°. Again on January 18th, 20th, and 22nd, 6 minims were injected without result, while on January 30th, February 3rd and 10th, there were three rigors after the injections, with a temperature in one case of 102·8°, although after the first the dose was reduced to 5 minims, and the intervals were lengthened. Finally, at the end of February, the dose was raised to 8 minims, and as this had no effect the treatment was discontinued.

So far as the patient was concerned the treatment was beneficial rather than otherwise. In spite of his rigors his weight went up from 9 st. 12 lbs. to 10 st. 5 lbs.

The tumour at first increased rapidly. The skin became red and tender, so that the injections had to be made by the side of it, and the outline became vague and indistinct, extending below as well as above the pelvic brim.

About the middle of January it was noted that the tumour was certainly smaller, and the glands less apparent. At the end of the month, at the same time as the three rigors, it was larger again and had all the appearance of being acutely inflamed. From that time until the date of his discharge, at the beginning of March, 1896, it shrank and grew hard and irregular in outline until there was very little of it to be felt; since then it has scarcely altered.

Case II.

F. W., aged 48, admitted November 10th, 1896, for an abdominal tumour. One month before patient had been seized with pain in left flank. Shortly after he noticed a swelling there. He had suffered from constipation with much flatus. There were no urinary symptoms.

The left flank was occupied by a large irregular swelling, hard, elastic, not fluctuating, not connected with the skin or muscles. It appeared to be fixed. Below, it descended into the iliac fossa; above, it reached under the false ribs; in front, it came nearly to the middle line pushing the colon before it. There was no glandular enlargement and little pain.

The tumour rapidly increased in size. On December 14th 1 minim was injected, the temperature rising to 100° F. On the 16th 2 minims were injected, and this was repeated every two or three days until the dose rose to 6 minims. As a rule, the temperature was not affected. On December 29th, however, there was a

rigor with 4 minims, and on January 24th another with 7 minims, the temperature rising to 101.8° that evening, and to 103.6° the next day. For a fortnight afterwards it kept above normal, and no further injections were made.

The tumour continued to grow, until at last it pressed upon the colon and threatened obstruction. At the time of the rigor in the middle of January, it became acutely inflamed, the skin being red and œdematous, so that there was some fear of suppuration. As this subsided the tumour began to shrink, and this continued until it could scarcely be felt.

The patient went out in March. Unfortunately he had not been weighed at the time of admission, but he was certainly stouter and stronger than he had been then.

I am fully aware of the fallacy that will be said to underlie these two cases. I have no proof that they were sarcomata. There was no microscopic examination. I can only say that they were diagnosed as such by several of my colleagues independently of each other, and that it is very difficult to understand what they could have been if they were not sarcomata. They were certainly not gummata, and with the exception of the irregular temperature in the first case (which may occur with sarcomata), there was nothing to suggest an inflammatory origin. Had they been due to inflammation, it is almost certain that they would have suppurated under the treatment.

I am also aware that several English surgeons have tried Coley's fluid without success, and that a committee of American surgeons has pronounced against it, and declared it to be a dangerous and useless remedy. With the former of these epithets I entirely agree. It is dangerous. In one case in which I advised it the patient, who had become very much weaker during the interval that he was necessarily kept waiting before it could be obtained from America, died shortly after the second injection. As regards its being useless, Dr. Coley has published 20 cases, authenticated in every particular, in which the tumours have disappeared in every instance, and the patients have remained free from recurrence, some of them for so long as four years. So far as I know, no one has ventured to throw the slightest doubt upon these cases; and I maintain that if they are admitted, the negative evidence of a committee, however eminent the members may be, is absolutely worthless in comparison.

I have tried Coley's fluid in nine cases of inoperable sarcoma. One died, as I have already mentioned, shortly after the second injection. One refused further treatment after two or three. Two are under treatment at the present time. In three the growths have disappeared. In the remaining two, although they did not disappear, they became greatly modified, and for a time diminished in size.

How Coley's fluid acts is another matter. Whether it has a specific influence, or whether, as seems probable from these two cases, it gives rise to an acute attack of inflammation, as a result of which the growth disappears, there is not as yet sufficient evidence to show.

MR. WATSON CHEYNE said he had treated two cases of tumour with Coley's fluid, and one he had sent to America to Dr. Coley, but without success in any instance. He was unable to say what was the nature of the sarcoma in his own cases, but he had no doubt as to their being sarcomata. In the American case he had been enabled to satisfy himself that the growth was a lymphosarcoma. He added that no one who knew Dr. Coley would hesitate one moment to believe anything he had stated. The curious point was that in almost all his successful cases the growth had been of the spindle-celled variety; so that in so far as the treatment had a curative action, it was limited to a very small class of cases.

DR. COLMAN asked the author whether he had had any opportunity of inspecting the tumours after the injections. He mentioned that some years ago he had had an opportunity of examining two cases *post mortem*. One died from some intercurrent disease, and in that case the tumour proved to be a round-celled sarcoma. Extensive softening had taken place in its interior, where there was a small cavity containing a fluid composed of broken-down cells. The other patient lived for 10 months after the injections. In that case the tumour was a spindle-celled sarcoma. No improvement had followed, but there had been signs of inflammatory reaction, and *post mortem* he found three cicatrices where the inflammation had been, and these had contracted like other cicatrices.

THE PRESIDENT asked how the fluid was injected and what was the diluting agency.

MR. MOULLIN, in reply, said the method of diluting adopted was somewhat wasteful, considering that the fluid was very costly and difficult to obtain. The usual way was to take into the syringe two or three drops and then to draw up a certain quantity of sterilised distilled water, using the requisite proportion of the mixture. He said he had never had an opportunity of examining a case *post mortem*. The fatal case he had referred to occurred at Dover, and he had been unable to attend. In a case of sarcoma of the neck at present under observation, the growth extended in the region of the sterno mastoid and involved the large vessels. It had developed a soft semi-fluid swelling in the centre before injection, and that had since sloughed out without leading to hæmorrhage or to trouble of any kind.

CASE OF OBESITY.

By F. DE HAVILLAND HALL, M.D., F.R.C.P.

T. C., aged 41, an engineer. Has always been stout; at the age of 18 weighed 13 st. 9 lbs. Admitted into the Westminster Hospital August 17th, 1896, for loss of power in left arm and leg. States that he weighs 28 st.; height, 5 feet 8 inches.

Has partial hemiplegia; apex beat neither visible nor palpable, no bruit. Urine, sp. gr. 1030, no albumen, no sugar. Previous history of sciatica and gout.

| | | | | | st. | lbs. | ozs. |
|------------------|--------|------|----|----|-----|------|------|
| <i>Weight.</i> — | August | 29th | .. | .. | 24 | 11 | 8 |
| | Sept. | 4th | .. | .. | 24 | 7 | 8 |
| | „ | 11th | .. | .. | 24 | 2 | 0 |
| | „ | 18th | .. | .. | 23 | 10 | 0 |
| | „ | 25th | .. | .. | 23 | 2 | 0 |
| | Oct. | 2nd | .. | .. | 22 | 11 | 10 |
| | „ | 9th | .. | .. | 22 | 7 | 6 |
| | „ | 16th | .. | .. | 22 | 2 | 2 |
| | „ | 23rd | .. | .. | 22 | 0 | 12 |
| | „ | 30th | .. | .. | 21 | 10 | 3 |

Discharged the following week.

Weight to-day (November 8th, 1897), 19 st. 5 lbs.

On admission—Ordered Hst. Potass. Iod.

Sept. 3rd—Put on a nitrogenous diet (meat, fish, green vegetables, toast); no alcohol.

„ 8th—Ordered 1 thyroid tabloid daily.

„ 11th— „ 2 „ tabloids daily.

Oct. 3rd— „ 3 „ „

Temperature practically normal throughout. Pulse 80 to 108, usually about 96.

Marked diuresis. Urine nearly always above normal amount, and up to 90 ounces a day. Urea, 2·2 to 3·8 per cent.

After he left the hospital he continued the diet as far as possible, and has had one thyroid gland tabloid daily for most of the time.

MULTIPLE SUBCUTANEOUS TUMOURS.

By GEORGE TEMPLETON, F.R.C.S. Eng.

THE patient, A. B., a barmaid, is a healthy single woman, 29 years of age, with a good family history. Seven years ago she noticed a small, movable swelling under the skin of the right loin, her attention being directed thither by pain.

Since then several others have made their appearance, commencing as small, round, hard nodules; they gradually increase, the largest now being $1\frac{1}{2}$ inches across. There are 24 of them scattered over the trunk and limbs, but not on the face. They are free from pain, except when irritated by the clothing; it is then of a dull, aching character.

When manipulated, the smaller ones are fairly hard and movable; the larger ones are rather more fixed, and appear to contain more soft fibrous tissue and fat than do the others. None of them have been removed. She does not know of a similar condition ever having existed in any of her relatives.

Dr. F. DE HAVILLAND HALL said he had observed a similar eruption in a man, which he subsequently diagnosed as fibro-lipomata. This patient later developed fibrosis of the lung, &c. He had tried pretty well everything without avail, and as the growths caused him little or no inconvenience, the patient was of opinion that they would be best left alone.

Mr. BATTLE asked whether the author had excised one of the lumps for the purpose of microscopical examination.

Mr. WALLIS observed that the interest of the case lay in the possibility of there being sarcomatous elements. His own impression was that the tumours were fibro-lipomata, and he advised that one should be removed for examination.

Dr. SYMONS ECCLES asked whether the harder of the tumours were the more recent or *vice versâ*. He referred to a case shown at the West London Medical Society, in which the examination of one of the tumours showed it to be a lipoma.

Mr. TEMPLETON, in reply, said his own diagnosis was fibro-lipomata. The younger growths were more particularly fibrous, whereas the older growths were softer, probably from an admixture of fatty tissue. He had not had an opportunity of examining one microscopically, as the patient would not consent to its removal.

A CASE OF CANCER OF THE BREAST, &c., DRESSED WITH A RECTANGULAR SPLINT.

By E. COTTERELL, F.R.C.S. Eng.,

MR. COTTERELL showed a patient treated with an axillary rectangular splint after excision of the mamma, with free removal of the pectoral muscle. The arm was placed at right angles to the trunk instead of being bound to the side. The idea was suggested to him by Dr. Heaton, and the result in this case appeared to be most successful. He agreed that it was too early, 15 days after the operation, to be certain that there would be no cicatricial contraction, but the patient could already use her arm to do her hair, and he thought that if she used her arm regularly there would be little risk of contraction. There had been no pain after the operation, although there was usually discomfort or cramp when the arm was bound tightly to the side.

MR. MANSELL MOULLIN asked how much of the muscle had been removed.

MR. WALLIS congratulated the author on the admirable result he had achieved. At the same time he thought it was rather early to show it, but he hoped that, when seen later on, there would be equally good movement. Much was doubtless due to the aseptic course and the consequent absence of all inflammatory mischief, but some share of the credit was also due, no doubt, to the position—the value of which deserved to be emphasised. No doubt fixing the elbow to the side in the usual way itself produced much limitation of movement afterwards, but it was too early to be able to state whether the excellent movement at present obtained would prove permanent.

MR. COTTERELL, in reply, said that nearly all the costo humeral portion of the muscle had been removed. He admitted that it was early to show the case, but she was shortly leaving for her home in Norfolk and no other opportunity might be available. The permanence of the freedom of movement would, of course, largely depend on the patient herself, but he thought that she would be likely to attend to it. With respect to the prevention of hæmorrhage, &c., by keeping the arm to the side, he pointed out that it was a fallacy, for one could always stop any bleeding before closing the wound, and the amount of pressure one could get by bandaging on a rectangular splint was fully equal to that obtainable by bandaging the arm to the side. He pointed out that the patient was very comfortable from the onset—a condition of things which compared favourably with that of a patient whose arm was tightly bandaged to the side, under which circumstances much pain and inconvenience were often complained of.

February 14th, 1898.

A CASE OF INNOMINATE ANEURYSM.

By SEYMOUR TAYLOR, M.D.

THE patient, James W., aged 43, a bus-driver, came to my outpatient room on November 4th, 1897 (kindly sent by Dr. Lewis), complaining of pain in right shoulder, with a lump below the right collar-bone. He has always been a temperate man, and has not had syphilis.

On examination, there is a bulge or tumour which involves the inner third of supra-clavicular and infra-clavicular regions, together with the first and second costal cartilages and manubrium sterni on the right side. There is partial dislocation of the right sterno-clavicular articulation. Besides this bulge there are the other cardinal signs of aneurysm of the arch or of the large vessels springing therefrom, viz., pulsation over the tumour, dulness, diastolic shock, and at times a distinct thrill. The heart is hypertrophied, there is a soft blowing systolic murmur which is loudest at the apex. The pressure signs are marked in the venous system, the arterial system, and in the nervous system; he has well-marked engorgement of the veins at the root of the neck and upper part of chest; the right pulse is somewhat smaller than the left, and the same remark applies to the right pupil. He, however, has no cough, no dysphagia, no paralysis of the vocal cords.

The PRESIDENT thought it was usual for the aorta itself to be dilated in the neighbourhood of innominate aneurysms, and he suggested that this was probably the case in the patient before them. He had made out the tracheal tug pretty distinctly on examining him. He asked the opinion of surgeons as to the proper treatment.

Dr. MAGUIRE endorsed the author's protest against relegating patients to bed for weeks or months with a treatment of iodide of potassium, and he asked whether the author or any one else could cite cases of aneurysm of the aorta or arteria innominata in working men which had been so benefited by rest and iodide of potassium as to allow of the patient doing an even moderate amount of his proper work. He admitted that there was usually some immediate improvement, but doubted whether there was such a thing as absolute cure. He pointed out that it was a most serious thing for a patient to be thus reduced to idleness for long periods of time. He referred to the case of a patient at St. Mary's Hospital who had previously been under treatment at St. George's. The man stated

that if he could resume his work as a plasterer he could at that time earn good wages, but Dr. Maguire felt obliged to represent to him the danger which this would entail, and having done so he invited him to enter the hospital. This to his satisfaction the man refused to do. He thought on the whole that it was better to allow the patient to get about under such circumstances. He pointed out also that when the aneurysm pressed upon the œsophagus or trachea, for example, prolonged rest in bed in the recumbent posture might of itself be productive of harmful effects, and might determine a threatening rupture and fatal hæmorrhage.

Dr. A. H. ROBINSON referred to a case of supposed aortic aneurysm in which there was a large tumour pulsating over the suprasternal notch. The patient was seen by Mr. Christopher Heath, and eventually the left common carotid artery was tied. Immense relief immediately followed this operation, and the patient, who previously had been obliged to preserve a position with the chin in close apposition to the chest, was able to resume a normal position in bed. The case came to an end a few months later and the pathological preparation showed an aneurysm at the root of the innominate artery.

Dr. TAYLOR, in reply, agreed that such patients led a happier life when allowed to go about than when confined to bed, and he approved of the idea of modifying the patient's occupation to altered circumstances rather than that of condemning him to enforced inaction. He must, of course, be informed of the probability of sudden death so that he might not be taken by surprise. He himself had not seen much success following the treatment by iodide of potassium in the London hospitals, and he referred to the case of a private patient who had carried on business for 10 years with a pulsating tumour due to an aortic aneurysm.

CASE OF TUBERCULAR DISEASE OF THE FRONTAL BONE: REMOVAL OF MOST OF THE BONE.

By STANLEY BOYD, F.R.C.S.

THE patient, F. M., aged 19, was admitted to Charing Cross Hospital in February, 1897. He had been quite well up to 12 years old; then he began to suffer from bad eyes, sight became very bad and there was photophobia. At 15 he went to the Westminster Ophthalmic Hospital where he was said to have double cataract; a double iridectomy upwards was done and the left lens was removed. Some years ago an abscess burst on the right side of his neck. Five or six months ago a swelling formed in the frontal region of the scalp, burst, and discharged a lot of matter. On admission there was an ulcer the size of a shilling over the coronal suture, just to the right of the middle line; its base consisted chiefly of carious bone, and it discharged a little pus. From this level down to the

eyebrows and out to the temporal crests the frontal region was considerably but irregularly swollen, hard and tender; the whole calvaria was tender but presented no other thickening. No distinct swelling was found on any other bone. Sight was extremely bad. The right lens was opaque. The left cornea was nebulous marginally, but no trace of old vessels could be discovered. The fundus could not be seen. The left globe seemed rather too prominent. The bridge of the nose was fair; no discharge. The upper central incisors were slightly narrowed at their free edges, and showed a faint central notch. No other signs raising suspicion of congenital syphilis were found, nor could any history of it be obtained. There were considerably enlarged glands beneath both sterno-mastoids, scars of old abscesses on the right side and a discharging sinus on the left.

On February 20th the glands (tubercular) and abscess cavity were cleared out of the left side of the neck. On March 26th the glands on the right side were larger and some recurrence was evident on the left side; both were operated on, but the right parotid was so infiltrated that the operation here was manifestly incomplete. Meanwhile, the frontal swelling had increased steadily and was softening at the most prominent point. It was doubtless keeping up infection of the cervical glands. On March 30th both eyelids were œdematous and there were three distinct fluctuating swellings on the right half of the forehead. Next day a cut down to bone was made from zygoma to zygoma just in front of the ulcer in the coronal suture; this was excised, the scalp elevated on either side of it, and the frontal flap was turned down on to the face. To its deep surface adhered much cheesy stuff and flakes of bone. The frontal bone was everywhere worm-eaten, eaten through in several places where sequestra lay, and was of pale opaque yellow colour. The sequestra were removed; an elevator easily tore off large flakes half the thickness of the bone and the deep half was cut away without difficulty until the normal bone was reached. The greater part of the squama, of the frontal bone, the orbital arches and much of the orbital plates was thus removed; in the neighbourhood of the ulcer the bone was a good deal thickened and sclerosed. The dura exposed was covered with opaque yellow stuff, as tough as old fibrin and tearing in laminae; this formed a layer $\frac{1}{2}$ inch thick and was scraped away till

bleeding dura was exposed; bleeding was stopped by pressure, and carbolic lotion 1 in 20 was then freely applied. Some bits of cheesy material could not be safely removed from the dura; so iodoform gauze was laid on this membrane and the frontal flap was turned up into place and supported by the dressing. No unfavourable symptoms followed. But it was soon found that without sutures the frontal flap could not be kept in position. It slid down further and further towards the root of the nose, falling into deep transverse wrinkles. Time was wasted trying to draw it up with strapping until on April 15th the edges were $1\frac{1}{4}$ inches apart. An anæsthetic was now given, some few adhesions of the flap to the dura were separated, but the flap would not stretch in the least. Its rigidity seemed to be due to contraction of the frontales and galea; and the edges could not be got even partially together until I had dissected off the whole of this layer from the deep surface, at the risk of dividing the supplying vessels. No trace of tubercle was seen. The flap was fixed in position by stitches, drainage being provided for, and all now went well. The patient left hospital, healed, on May 23rd, 1897, the sight of the left eye having distinctly improved.

Mr. SPENCER WATSON thought the case was unique in respect of the amount of bone removed and the success attained. *A priori* one would hardly have anticipated so pronounced a success. When a large extent of bone was infected with tubercle, as in this case, one would naturally expect some other part or parts of the body to be similarly affected. He asked whether there had been any proptosis. It often happened when there was disease connected with the orbital plate of the frontal bone that there was some protrusion of the eyeballs, though this symptom had not been mentioned as existing in the case under discussion.

Mr. SHEILD said that one of the most interesting features in the case was the nature of the disease, tuberculous necrosis of the skull bones being so rare, and syphilitic necrosis so common. He referred to a case formerly under the care of the late Mr. Pollock which very much resembled the one under discussion except that it was not the frontal but the occipital bone that was affected. The patient was a boy, aged 6, who had come into hospital with a small fluctuating tumour over the occiput which was opened. Finally almost the whole of the bone was removed not in one piece but in segments. There was much discussion on that case, and it was attributed to congenital syphilis. He asked the author whether he had the specimen of his case. (The author replied in the negative.) He alluded to the difficulty of distinguishing between congenital syphilis and tuberculosis even when the skin was affected. Sometimes tubercular disease sloughing through the skin made circular apertures very much resembling those of syphilis. The difficulty in respect of the disease of the bones was even greater and could not be regarded as definitely settled. He pointed out that ocular affections in

very young subjects, iritis or affections of the choroid or cornea, inclined one to the syphilitic theory, but on the whole he was disposed to look upon this case as a mixed one of tubercle and congenital syphilis.

Mr. STANLEY BOYD endorsed Mr. Sheild's views. The evidence of congenital syphilis was really very slight.* When the patient came into hospital, knowing how rare it was to meet with tuberculous necrosis of the skull, his mind had naturally been directed to a possible syphilitic origin. The patient had been at the Westminster Ophthalmic Hospital, but enquiry there as to the nature of the case had elicited merely that the diagnosis had been "double cataract." He was unable to say why the patient did not see better than he did at present. He raised the question whether tuberculous disease of the skull was as rare as it was supposed to be. Its occurrence was dealt with at length by German authors, and the frontal bone was said to be most frequently affected. It was impossible to convey to others an exact impression of the morbid appearances; he could only say that for his own part he had no doubt that it was a case of tuberculous disease. There was slight proptosis, most marked on the left side. After the operation the patient said he could see much better than before.

CASE OF EMPYEMA AFTER OPERATION.

By MAURICE LING, M.R.C.S.

THE patient, a man, aged 25 years, was attacked with pleuropneumonia of the right side, and in less than three weeks began to expectorate pus in large quantities, later as much as half a pint night and morning, yet he gradually gained some strength and was able to get about. Five months from the commencement of the illness there was pain with tenderness and bulging of the lower part of the right chest; an incision was made and four pints of pus escaped. Five weeks later a piece of the sixth rib was removed, some adhesions broken down, and a counter opening made posteriorly in the ninth space, a large drainage tube being drawn through both openings; this was afterwards divided and the anterior opening quickly healed; a probe inserted in the posterior opening could be felt in the anterior triangle of the neck, and bare bone could be felt in the track. On injecting water into the sinus with a catheter it went directly into a bronchus, so no injection could be used. However, five years from the commencement of the illness injection of water proved

* At the meeting Mr. Cargill examined the patient. He marked atrophy of the choroid upon both sides and traces of old vessels in the left cornea. He was strongly of opinion that these lesions were due to congenital syphilis.

that the opening into the lung had closed, and dilute sulphuric acid (1 in 11) was now injected into the sinus. This was repeated on two occasions, and at the end of a fortnight the patient was seized whilst in bed with sharp hæmorrhage from the sinus, and what was said to be crumbled bone was discharged. The wound healed in a few days. It was remarkable to see how quickly—just a week—the finger-tips, which had been very clubbed while the discharge lasted, began to diminish in size, as evidenced by the wrinkling of the skin, as soon as the sinus had healed.

Mr. BATTLE considered the interesting point was the occurrence of hæmorrhage so long after the first operation. It looked as if a sequestrum had ulcerated into the intercostal artery and had itself been washed away by the flow of blood.

CASE OF ANGIOMA SERPIGINOSUM.

By MORGAN DOCKRELL, M.D.

THE patient, a phlegmatic woman, aged 21 years had suffered from this disease since she was 3 months old. She had always enjoyed good health with the exception of the eruption, which appeared, when she was 3 months old, as a number of red spots and lines on the face and limbs, leaving the trunk practically free. This eruption remained permanent, neither increasing nor diminishing, till she was 16 years of age, when it began spontaneously to disappear. On the face could be noticed a number of telangiectic lesions of a bright red colour, and in addition a large number of flat scars could be observed where the telangiectases had disappeared. On the extensor aspects of the forearms and dorsal surfaces of the hands there were similar lesions of a purple colour, which were more deeply seated and did not disappear under pressure. In addition patches of pigmentation and depressed scars were present. The condition was more marked on the thighs and legs. The case was of interest in that the lesions remained unchanged till the age of 16 years, when they began to disappear spontaneously from the limbs without ulceration. Dr. Dockrell considered that there was no ground for still adhering to the theory that this condition was in any way a lupoid condition other than the fact that when it occurs in strumous individuals it is more apt to undergo ulceration.

CASE OF UNUSUAL RICKETTY DEFORMITY OF THE KNEE.

By WILLMOTT H. EVANS, F.R.C.S. Eng.

THE patient, a boy, aged 9 years, had noticed for two years that his left knee "clicked" on walking. When the left knee was flexed the inner tuberosity of the tibia formed a definite prominence on the inner side. This condition continued to exist as the flexion diminished until the leg was within about 20 degrees of full extension, when the tibia suddenly moved outwards, the prominence on the other side disappearing and the outer tuberosity becoming unduly prominent. The condition did not materially interfere with walking, and was hardly painful. It was due to irregularity in the curvatures of the condyles of the femur, and was rachitic in origin.

Mr. BATTLE said he must plead guilty to differing from the author's diagnosis. He himself thought that the sudden and abrupt jump did not correspond to any movement outwards of the tibia as suggested. He was disposed to believe that the movement was due to displacement of the external semi-lunar cartilage, which was a much more likely occurrence than that put forward by the author. The abrupt movement took place just over the semi-lunar cartilage. He suggested that the author would perhaps let them know what was the subsequent progress of the case. He thought the association with rickets was accidental.

CASE OF PLASTIC OPERATION AFTER REMOVAL OF EXTENSIVE RODENT ULCER OF THE FACE.

By W. H. BATTLE, F.R.C.S. Eng.

THE patient, a man, aged 55 years, had been troubled by the ulcer for 26 years. It had been removed elsewhere by other surgeons several times, but had recurred. Recently Mr. Battle removed most of the cheek and parts of the superior maxilla and malar bones. To cover in the large area thus exposed the nasal bones and nasal processes were removed, and a flap was brought across from the right side of the face and nose, and the tip of the flap was sutured to the edge of the wound below the left malar bone. Union took place by first intention. The patient was to be fitted with an obturator to close the aperture in the roof of the mouth, and wear an artificial nose. The result was very satisfactory.

DEMONSTRATION OF "PALPATION AND AUSCULTATORY PERCUSSION."

By ROBERT MAGUIRE, M.D., F.R.C.P.

DR. ROBERT MAGUIRE stated that further experience of palpation, to which he had directed attention last year, had convinced him that for chest and abdominal examinations it was more delicate and accurate than percussion. By it the outlines of the heart, liver, and spleen could be easily defined by simply passing the fingers over the body-wall. He demonstrated his method of its application, showing that even the sternum was no obstacle to thus defining the resistance, and therefore the outline, of the heart by this means. The position of the kidneys could be thus shown, and also most accurately the upper border of a pleural effusion; while small areas of resistance, undiscoverable by percussion, could be found at times as evidence of former pleurisy or pneumonia. Auscultatory percussion was, he believed, a valuable method of physical examination, though it was in danger of falling into disrepute because of having been employed to determine the size of the heart in connection with the Nauheim method of treatment, and also because its *rationale* had always been misunderstood. By this method it was not an ordinary percussion note which was heard through the stethoscope, but the knock of direct contact. It was evident, therefore, that the method could give no information as to the size of the heart, but it could define the outlines of the stomach and of the distended large intestine, and was therefore of value to the surgeon before operating for stricture of the intestine. It could define, too, the outlines of the lobes of the lungs, and therefore was of value in the prognosis of phthisis by showing the precise position and progress of the disease. It also demonstrated accurately and easily the relative heights of the apices of the lungs behind—an observation which was very difficult by percussion alone, but which was a valuable aid to the diagnosis of incipient phthisis, since thus a slight shrinking of the upper part of the lung could be determined. He thought the method should not be allowed to pass into disuse, but it should always be employed with the understanding of its *rationale* which he had demonstrated.

The PRESIDENT wished to testify to the great value of the method suggested by Dr. Maguire. One must not forget that the individuality of the observer must count in such matters. At the same time, he could not doubt the value of palpation in the diagnosis of indurations of the lung, and especially of thickening about the apices. He himself had, since hearing of it from Dr. Maguire, systematically practised that method of examination. In commencing the examination of the thorax, after the preliminary inspection he invariably resorted to palpation, placing one hand at the back of the upper part, and palpating with the other towards the apices. He was quite sure that the finger was cognisant of resistance if any unusual consolidation were present. The sense of resilience was very marked when the lung was normal. Of course, palpation was chiefly practicable in the intercostal spaces, but a certain value attached to palpation even over the ribs and their cartilages. At any rate, he had found by experience that there was a considerable amount of valuable information to be obtained in this way. With reference to the condition of the apices, this method, of course, did not exclude the adoption of other known methods of physical investigation. He had, however, found some cases in which, although percussion was fairly clear on both sides, palpation gave evidence that the apices of the lungs were abnormally resistant, the diagnosis of phthisis becoming confirmed later on by the development of marked signs of apical disease. He was therefore enabled to confirm what the author had said of this method. It was possible that much still remained to be worked out in respect of it. The outlines of the heart obtained by some observers who had had recourse to some percussion methods had made him diffident about accepting the data furnished thereby, and even somewhat sceptical about his own observations.

Dr. MAGUIRE, in reply, said the results obtained by auscultatory percussion in estimating the size of the heart simply demonstrated what he had affirmed in his paper, viz., that it would show nothing of the kind; in fact, it only showed superficial cardiac dulness.

April 4th, 1898.

A CASE OF NEURALGIA OF THE FIFTH NERVE TREATED SUCCESSFULLY BY THE INJECTION OF OSMIC ACID.

By G. R. TURNER, F.R.C.S. Eng.

THE patient, R. R., aged 33, married, had been the subject of neuralgia for two years, for which she had received all kinds of medical treatment and had had various teeth extracted. The pain originally involved the infraorbital nerve, but had extended to the other divisions of the fifth and been accompanied by discharge from the right nostril. Nothing abnormal could be

detected in connection with nasal fossæ or antrum of Highmore. The pain was so excessive that she had threatened to destroy herself. In addition to drugs, change of air and scene had been tried and found wanting. It was decided at a consultation to explore the antrum and, finding nothing there, to remove Meckel's ganglion before dealing with the Gasserian ganglion. Before doing this, however, Mr. Turner, at Mr. Albert's suggestion, determined to inject a 1 per cent. aqueous solution of osmic acid into the infraorbital nerve, following the examples of Neuber, Eulenbergh, and Franck. This was accordingly done, the injection being passed by means of an ordinary hypodermic syringe into the infraorbital canal. For a week or 10 days afterwards but little improvement followed, indeed the injection was followed by considerable pain and tenderness. On this passing away the pain has not returned, and the patient has now for some two months been free from her old trouble. It is supposed that the nerve fibres are destroyed by the action of the acid, and an aqueous solution is said to be more efficacious than a glycerine one. When last seen, some six months after the operation, the patient was quite well.

Mr. J. MORGAN (the Vice-President in the chair) said it was probably the first time that this method of treatment had been tried in this country, and it presented the advantage of being less formidable than ordinary surgical procedures. He thought the fact that only one injection was found necessary showed that a great change had been induced in the nerve, but he supposed that the osmic acid must have acted directly on the nerve fibres.

Mr. PEEKE RICHARDS thought it was possible that the osmic acid had not penetrated the neurilemma and that the relief obtained was merely the result of a transitory traumatism.

CASE OF MULTIPLE VENOUS ANGEIOMATA.

By Dr. F. J. SMITH.

J. L., aged 50, admitted into London Hospital, February 21st, 1898. On admission a number of venous varicosities were observed, chiefly on the face and upper part of the trunk; most of these had a firm consistency when pinched up with the skin and did not disappear entirely on pressure. They vary in size from that of a pea to a small bean. On the right side of the bridge of nose is a vascular pulsating tumour which can be

entirely obliterated by pressure, and fills up again with two or three pulsations.

The veins of the right leg and thigh were very varicose on admission and those of the left leg varicose, but not so extensively. Both labia majora are much enlarged, with an extensive varicose condition of the veins.

The situation of the chief of these tumours is as follows:—(1) Right side of bridge of nose; (2) just to right and below angle of mouth; (3) on the dorsum and left edge of tongue; (4) on soft palate and inside lower lip and left side of cheek; (5) one in middle line of neck and some smaller ones below and to the right of it; (6) right shoulder; (7) right axilla; (8) right nipple, and also a few others in various positions.

On admission there were no physical signs of disease in lungs. *Heart* apex somewhat displaced outwards; first sound somewhat prolonged, second marked—no bruit. Nothing abnormal felt in the abdomen; *uterus* apparently normal size and movable. *Fundi*, normal. *Urine*, no albumen or sugar present. The patient says that before seven months ago (on admission) she was perfectly well and had no varicose veins even in the legs. About that time she noticed a small painful spot on the right side of the nose, which came up like a small red pimple; soon after this other red spots appeared on back and shoulder; after a day or two these turned blue and have not altered in appearance since that time. She is a widow and has had 10 children, of whom four are now alive; between the last two she had five miscarriages.

Dr. MAGUIRE pointed out that there was a condition which closely resembled these small tumours, viz., recurrent fibromata, which were not sarcomata at all. They did not present the typical cellular infiltration of the blood-vessels which characterised sarcomatous growths. He admitted, however, that some things in the appearances of the tumours in this case pointed in favour of their being simple varicosities.

Mr. BATTLE said it was difficult to imagine that there was any connection between the enlargement of the veins of the lower extremities and the multiple tumours about the face and tongue, &c. The question suggested itself whether these two conditions might not be quite independent and the enlargement of the veins in the lower extremities simply the result of advanced years and possibly of prolonged standing, while the definite vascular tumours might possibly be sarcomatous. He pointed out that some of the latter contained a good deal of solid material with the exception of the one over the nose. One not uncommonly met with cystic degenerations of sarcomatous growths. When the veins of

the nose were emptied the tumour disappeared ; this was probably due to free communication of blood cyst in the growth with veins around.

Dr. SMITH observed that as Mr. Battle was showing a case treated with Coley's fluid, he would like to ask him whether he thought the evidence of malignancy was sufficient to justify its being tried in this case.

Mr. BATTLE suggested that it would be well previously to remove one of the small tumours for microscopical examination. That, he added, was desirable under any circumstances if only to clear up their nature.

Mr. J. MORGAN (the Vice-President in the chair) observed that at first sight he felt inclined to take the view that these small tumours were of a sarcomatous nature and that there was pressure upon the veins in some part of the body causing the dilatation of the veins in the lower parts. That, however, was pure conjecture. He added that it would be interesting to see this patient later on.

CASE OF CONGENITAL HEART DISEASE.

By ROBERT MAGUIRE, M.D., F.R.C.P.

DR. ROBERT MAGUIRE showed a case of imperfect closure of the septum ventriculorum. The man, aged 27 years, presented himself at St. Mary's Hospital complaining of acne. In the course of the usual examination he was found to show a systolic murmur, heard over almost all parts of the chest, but best of all along the line of the interventricular septum, and especially about 1 inch above the level of the apex beat. The murmur diminished in intensity very rapidly when the stethoscope left the line of the septum, though sometimes in this patient it was heard with undiminished intensity over the whole of the right ventricle. The murmur presented the characters which Dr. Maguire had on a former occasion before the Society asserted to be characteristic of a deficiency in the ventricular septum.

Such a condition might be due to an intra-uterine endocarditis causing stenosis of the pulmonary orifice, which would so raise the pressure in the right ventricle at the time when the septum was forming as to prevent its due closure ; or again, to a lack of developmental power during the formation of the septum. The latter was probably the case in the patient shown, since the murmur, in its intensity, did not follow the course of the pulmonary artery towards the left, and there was no enlargement of the right ventricle.

The patient had often been noticed to be "blue" when a child, but now had no cyanosis, though he easily got out of breath on

exertion. The absence of cyanosis was explained by the fact that the pressure in the left ventricle was so much greater than that in the right ventricle that admixture of blood only took place in the right ventricle, and therefore there was no admixture of carbonised blood with that of the aortic circulation. Such admixture does take place in such cases when bronchitis or pneumonia increases the tension in the right ventricle. Deficiency of the septum is by far the most common of congenital affections of the heart which cause signs, and it is important to diagnose it, since, in spite of its marked physical signs, it need not necessarily interfere greatly with the future life of the patient.

Dr. FRED. J. SMITH said the case was one presenting considerable interest as it was out of the usual run of cardiac cases, but at the same time, without casting any doubt on the author's diagnostic acumen, he was unable to bring himself to believe that the case could be of the nature described. First he thought that congenital morbus cordis to the extent of a deficient septum, and with such well marked evidence thereof, must necessarily entail more circulatory disturbance than was apparent in this patient. Coming then to the observable facts, he remarked that the bruit was as loud, if not louder, over the apex than over the right ventricle. There was also another fact against it: he had recently done the *post-mortem* examination of a case which had been under his observation for many years for congenital morbus cordis. In that case, for the greater part of the time at any rate, there had never been any bruit at all. The boy died with slight hæmoptysis; he had always suffered from "blue fits," but *post mortem* they found that the pulmonary artery would barely admit a small sound, and the septum was imperfect. He asked why, if there was a bruit in the author's case as the result of an imperfect septum, there should have been none in his own. He observed that the patient before them showed none of the ordinary signs of congenital morbus cordis. He looked well built, and was tolerably athletic, and there were no signs of cyanosis. He himself was rather disposed to think there was some imperfection of the mitral valve rather than of the septum ventriculorum.

Dr. CHAPMAN pointed out that according to the patient his mother had been "rheumaticky." He added that he had seen two cases of pulmonary stenosis, in which there was very little cyanosis, the only symptom being a little passing bronchitis occasionally.

Mr. J. MORGAN (the Vice-President in the chair) observed that one must be influenced in arriving at an opinion by the presence or otherwise of some other congenital defect. He frequently saw cases of congenital malformations in which there was some associated defect of the heart, so much so that before operating or advising an operation he always had the heart examined. He gathered that in this patient there were not other obvious abnormalities.

Dr. MAGUIRE, in reply, said he had duly considered the points that had been raised before bringing the case before the Society. It was mentioned in his notes that in this patient the murmur was heard occasionally with undiminished intensity over the whole of the right ventricle. When he first saw him the greatest intensity of the murmur

was distinctly confined to the line of the septum, but subsequently he sometimes heard it over the right ventricle. On the evening of the meeting, while the patient was waiting, there was not that intensity of the murmur over the right ventricle, and he supposed that the excitement of coming before the Fellows had stimulated the left heart to greater activity, thus driving the blood with more force into the right ventricle. He was quite prepared to hear it stated that there was sometimes no murmur at all in cases of imperfect septum, and especially to receive observations in respect of the absence of symptoms. In the case mentioned by Dr. Smith there was extreme stenosis of the pulmonary orifice, and the tension of the right ventricle was probably so much raised thereby that it became nearly equal to that in the left ventricle, so there would be no passage of blood through the septum. He admitted that in his patient the murmur was the only indication of the defect, but he had met with a similar thing in other cases in which the condition was verified *post mortem*. It was a fact that there might be no symptoms whatever, the patient ultimately dying of some other disease. He recalled a case, the first patient he had seen in his pupilship, in which his principal had diagnosed congenital morbus cordis in a child of 6. That boy sometimes became blue, but sometimes showed no cyanosis or any other signs whatever referable to the heart. Eight years later this boy suddenly became intensely cyanosed and died, and *post mortem* they found practically only one ventricle, so large was the aperture in the septum. There was also marked stenosis of the pulmonary artery. There was a bruit in that case, the characters of which he could not remember.

A CASE ILLUSTRATING THE ADVANTAGE OF COLEY'S FLUID IN THE TREATMENT OF INOPERABLE TUMOURS.

By WILLIAM H. BATTLE, F.R.C.S.

G. C., a man, aged 30, was admitted under the care of Mr. MacKellar into St. Thomas's Hospital on December 21st, 1897, from my out-patient department. The patient, a former guardsman, muscular and well-developed, had suffered from syphilis six years before. Between three and four months before admission he noticed a lump under his right arm, accompanied by pain, and shortly afterwards other swellings. Then supervened difficulty in moving his arm, and the arm had gradually become more swollen. About two weeks before admission he noticed a swelling above the right clavicle, and another over the right side of the sternum. The right arm was swollen and cedematous, the superficial veins in the upper part dilated and tortuous. The shoulder was somewhat raised and the arm held a little away from the side. There was marked fulness under the right

clavicle, and a definite tumour the size of a walnut over the right side of sternum at the junction of the fourth costal cartilage. There was also abnormal swelling above the right clavicle. The swelling below the clavicle was caused by the pushing forward of the pectoralis major by an elastic tumour of considerable size and irregular shape. This was fixed to the deeper parts, but did not invade the pectoralis. The sternal swelling fluctuated and was adherent to the bone, but not suppurating, though there was some redness of the skin. Below the nipple were two small nodules growing in the skin. Above the clavicle was a growth, somewhat flattened from before backwards and adherent to the bone, it was about the size of a hen's egg. In the axilla were numerous enlarged glands of varying size, one or two as large as Tangerine oranges, others smaller and harder. There was an irregular red rash over the front of the legs with squamous surface which he had noticed for three weeks. His general condition was good.

Iodide of potassium in increasing doses was given from the first, but, although there was less swelling of the arm and less also of the glandular swelling in the axilla, there was no improvement in the condition of the main growths, so on January 5th Mr. C. S. Wallace removed pieces from the sternal and sub-clavicular growths. These were examined by Mr. Shattock and Dr. Jenner, the report being that both were sections from a fibrosarcoma and contained giant cells. The man came under my care, owing to the illness of my senior colleague, and as the growths were evidently beyond chance of relief by operation, I placed the possible advantages and dangers of Coley's fluid before the man, who readily consented to its employment. Half-minim doses were given at first every other day, from January 21st till March 21st (iodide of potassium mixture being continued until March 6th, when it was stopped), and from that day until now the injection has been given of 1 minim every other day.

The result is that he has much improved in general health, and presents for examination only two swellings, one over the site of the sternal tumour, the other under the clavicle. The former is about one-third its former size, the other is now only a flat, limited hardness in the costo-coracoid membrane above the pectoralis minor, measuring about $1\frac{1}{2}$ inches by $1\frac{1}{4}$ inches.

A remarkable feature in the case has been the absence of any reaction, there having been a uniformly normal rate of temperature since the treatment was commenced.

The VICE-PRESIDENT (in the chair) said he had seen very little of this treatment, and what he had heard had rather made him afraid to try it, except in hopeless cases such as the one the author had shown them. What had happened in this case, however, might happen in another. It was a most interesting feature that there had been no reaction of any kind as the result of the injection. The result of the injections was manifest and unmistakable. It would be interesting to follow up the future history of this case. If the tumour disappeared or even remained quiescent it would encourage them to try the fluid in other patients.

Mr. BATTLE referred to another case of spindle-celled sarcoma of the peritoneum in which the injection had been followed by a fatal result after injection into the tumour itself. Before this untoward result put a stop to the treatment the result had been very satisfactory, the abdominal measurement having gone down an inch. It was to be regretted that the injections had not been made only in the arm, for progress, until the site of injection had been changed, was distinctly encouraging.

INTRACAPSULAR FRACTURE OF THE NECK OF THE FEMUR IN A BOY.

By WILLIAM H. BATTLE, F.R.C.S.

ON December 26th, 1897, the patient had three falls; he walked home in the evening and apparently suffered no inconvenience beyond a slight stiffness in the hip, which caused him to limp slightly. The lameness continued until January 6th, when he had another fall and was carried home, being quite unable to walk. He was in great pain every time he moved his right leg.

On admission—Great pain on attempted movement of the hip. Foot everted, shortening nearly $\frac{3}{4}$ inch. The thigh was kept partly flexed and rigid.

Later—Movement improved, but was accompanied by a very marked "crunching" sound.

Dr. Blacker has since taken a skiagraph which shows the effects of the injury. The head of the bone is lying below and to the inner side of the neck.

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